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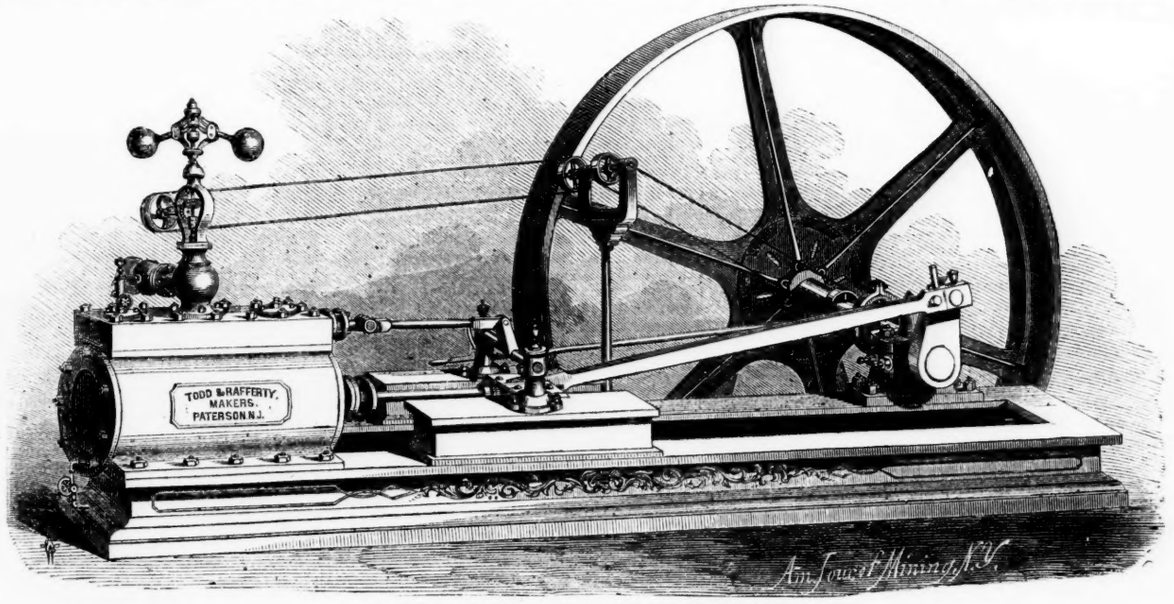
EXTENSIVE MACHINE WORKS

The machine works of Messrs. Todd & Rafferty, at Paterson, New Jersey, are among the most extensive of that State. They cover about two and a half acres of land, exclusive of the boiler shops, which occupy some thirty lots. Four hundred and fifty hands are employed, and all the work turned out is of superior workmanship and finish. Besides manufacturing portable and stationary steam engines and boilers, superior flax, hemp, tow, oakum and rope machinery are made, together with mill gearing, shafting, etc. Joseph C. Todd, Esq., the senior partner, has been in active business nearly thirty years. The firm was originally Todd & Mackay, but in 1848 the old firm was dissolved and the present organized, Mr. Philip Rafferty becoming a partner. The accompanying excellent engraving represents their neat and substantial Horizontal Steam Engine, the notable features of which are: simplicity, strength and superior workmanship. The cylinder is cast with a jacket, which prevents the condensation of steam. It is made with self-adjusting, or steam pistons, and is supplied with the Judson or the Snow patent governor and valve, both of which, for uniformity of motion, it is claimed, cannot be excelled by any other device for regulating the speed. Office and Warerooms, No. 4 Dey street, New York.



TODD & RAFFERTY'S HORIZONTAL STEAM ENGINE.

The Wilson Furnace.

From *Charles Ryland and Sons' Weekly Report of the Iron Trade* (what a frightfully long name to quote!) we learn that twelve of the Wilson furnaces are now at work at Milton, giving excellent results. It has encountered the utmost opposition of the puddlers, and these men have at last had notice given them to quit work in consequence, an invention shall not be shelved by prejudice and ignorance, nor by the selfishness of their men. It is to be understood that every possible objection has been falsely raised against the furnace. The men declared that it would not get out the same quantity of iron, that the heat was not sufficient, etc.; and as they had always been allowed a hand to clean their great-bar furnaces, they refused to clean out the refuse of the new furnaces, this refuse being so slight that only one minute to each heat, or six minutes to the shift of twelve hours, were required to remove it. They made what they called a fair trial to prove that so much iron could not be got out; but the result of five successive shifts of six heats each were a little against them, and in favor of the furnace. The Wilson furnace gave 113 cwt. 3lbs., while the great-bar furnace gave 112 cwt. 3 qr. As to the heat, it is found that if the fire-bricks of the furnace are not of good quality they are melted down; indeed, there is no want of heat. The cleaning out of the insignificant amount of refuse is the last ground of opposition, but the men will have to yield or be dismissed. In the meantime, the principal Sheffield firms are putting up furnaces of the new construction. Among these firms are Messrs. Cammel and Co., Messrs. Thomas Firth and Sons, Messrs. Ibbotson Brothers, etc. Messrs. Hick, Hargreaves and Co., of Bolton, Messrs. Bell Brothers, of Newcastle, and others elsewhere are also having Wilson furnaces erected. One is being put up at Messrs. Hepburn's, Long-lane, Southwark, to burn tan, a material which is now a great nuisance to the neighborhood. Another is fitted to a steam vessel belonging to the Lambton company, plying between Sutherland and London. But for the selfish opposition of the Milton puddlers, which has now ended in their discomfiture, hundreds would have now been in use.

The New Volcanic Island.

The volcanic island of Santorino has not yet ceased its eruptions. Eight small islands, which have made their appearance one by one between Nea-Kammeni and Palea-Kammeni in the course of the present year, are now soldered together, as it were, into a single piece, and their mass continues to increase insensibly and without emitting heat or vapor of any sort. One of the strangest phenomena connected with this island occurred a month ago, when the conical summit of George I. was suddenly blown into the air to a prodigious height, with a violent detonation that was heard fifty miles off. This is still the chief point of volcanic action, and the only one from which flames are seen to issue. The island of Ophressa is cooled down, and the only indication of its volcanic origin that now remains (except composition) is a wreath of smoke or two curling up into the air in the vicinity of the old crater.

The South Wales Coal Field.

At the meeting of the South Wales Institute of Engineers, Mr. Bedlington said he calculated that in South Wales, including Monmouthshire and excluding Pembrokeshire, there were 21,100,000,000 tons of unworked coal, in seams of 2 foot and upwards. At the present rate of extraction this would last 1918 years, and it would supply the total requirements of the country for 229 years. He estimated the depth of the basin at 1,000 yards, and they had already pits in Lancashire 700 yards deep; therefore, with the continual improvements made in machinery, he did not apprehend any difficulty in going down.

Michel's Amalgamator.

An infinite variety of plans for pulverizing gold and silver-bearing ores have been invented and brought to

the notice of quartz-miners during the past ten years. Many of them have possessed more or less merit, but the best of them have betrayed defects when subjected to a practical test. The principal objection to the pans now in use, is the loss of quicksilver—and consequently a large amount of free gold—caused by its being ground to fineness with the pulp, and floating off with the agitated, muddy water. This serious difficulty has long been known to amalgamators, and all efforts to obviate it have, until recently, proved abortive. A pan invented by Justin Michel, of this city, and now in operation at the Allison Ranch mill, it is believed, approaches nearer perfection, in this respect, than any other heretofore in use. Perhaps no man in California has had better opportunities for testing and judging the merits of the different inventions for separating and saving gold than Phillip Galloway, superintendent of the Allison Ranch mine. Galloway, for some time past, has been engaged in a series of experiments with "Michel's Grinder, Amalgamator and Separator Pan," and gives it as his opinion, after a thorough and impartial trial, that this is by far the best pan for working sulphurets or tailings that has yet been invented. He has had the advantage of being able to compare this pan with several others now in use in their mill, and he has found it superior to them all. In some instances the difference in favor of Michel's pan has been equal to one hundred per cent. Coming from the source they do, these statements are of significant importance to those whose interests are affected by the quantity of gold saved and quicksilver retained in the grinding process. A pan that would save five per cent. more of the precious metals than its competitor, would be a great desideratum; but with a difference of from fifty to one hundred per cent. in its favor, its superiority would be so conclusive that but little effort would be necessary on the part of the inventor to introduce his invaluable "Grinder, Amalgamator and Separator Pan" into general use.—*Nevada (Cal.) Gazette.*

Mining in Ireland.

Almost every day opens out some fresh discovery, and adds imporatnt evidence to the fact of Ireland's great riches in mineral wealth. During the last week a fine lode of carbonate of iron, of a quality far superior to that found in Devonshire, has been met with near Tipperary. The Irish ore, being brighter in color and more easily ground, is far better suited to the purposes to which this peculiar mineral is generally applied. It is represented to be procurable in unlimited quantities, and near to a shipping port. It is highly micaceous and brilliant, and will make a most excellent material for being used in the preparation of antifriction grease, now so much in demand for locomotives and machinery.—*London Mining Journal.*

The Workers.

Clink, clank, sound the hammers now;
The sturdy anvils ring;
The bellows roar, and the hot flames pour
Their ruddy light far over the floor,
And the brawny smiths, they sing.

Whirr, whirr, go the busy looms
In the factories dark and high,
Where the timid sunbeam softly falls
Through the crusted pane on the blackened walls,
From the pure and beautiful sky.

Stitch, stitch, go the needles bright,
And the silver gleaming thread;
Women toiling early and late,
While the eyelids droop with a heavy weight,
To earn their daily bread.

Click, click, go the slender types,
As they fall from the printer's hand;
Scattering wide each burning thought,
As it shaped itself in the mind that wrought
Far over the waiting land.

Burr, burr, go the busy planes
In the lonely workshops, where
The sinewy joiners all day ply
Their noisy craft, and the shavings fly,
And their fragrance fills the air.

Ring, ring, chime the virgin coins,
As the mighty lever falls
On the solid bars of silver and gold,
The swarthy miners fashioned and rolled
In the great mint's vaulted halls.

Delve, delve—hear the miners at work
Far down in the hidden mines,
Toiling by day and toiling by night
'Mid the noxious gloom, where no ray of light
From the warm sun ever shines.

On, on, speed the sharpened ploughs,
As they turn the heavy soil,
Where the sturdy farmer guides the share
Through the last year's furrows gleaming bare
With the horny hand of toil.

These are the workers, hour by hour,
With hearts that are brave and true,
From dawn till dark, through the whole day's length,
Each gives with an earnest will his strength
To the work he finds to do.

But a grander task for all remains,
Which will only end with time;
And this great task is 'mid the ceaseless din
Of the constant struggle that hems us in,
To make our lives sublime.

Mining Summary.

Colorado.

From editorial correspondence of the *Denver News*, Oct. 24, we take the following: Along Clear Creek, below Idaho, some mining is being done in the bars. One sluice, about which we made inquiry, is paying twenty-five dollars per day to the hand. Some new bar claims are being opened, and if the weather continues favorable until late, or we have an open winter, a good deal of gold will yet be taken out along that stream this year. High water all summer prevented active mining in the bars until very recently. Idaho presents nothing new. At Spanish Bar, the Lombard company is pushing its works; both building and mining. Above Fall River the Copeland company has done considerable in the way of building the past summer, but at present is doing nothing in that direction. At Mill City, Mr. Hawkins is pushing work on his company's tunnel and mines with encouraging prospects. Empire has nothing new to report. Georgetown and Elizabethtown are still growing. A great number of new dwelling houses have gone up in the past summer. In fact three-quarters of the buildings look new. Four smelting furnaces for silver ores have already been built, and another is under contract to be finished this fall. The first furnace is the property of Messrs. Smith & Co., of Denver. It is a reverberatory, was tested satisfactorily, but has not done much work. The proprietors have fifty to seventy-five tons of ore down from the Beecher lead, and are adding to the pile at the rate of from two to three tons per day. Their Superintendent, Mr. Crow, informed us that it was not the intention to start up their furnace again until spring, by which time they expect to have crushing and reduction works for their ore. The next furnace built was put up by Messrs. Stowell & Bennett. It is at Elizabethtown—as are all except the one first mentioned—and is a Scotch hearth. It works Galena ore with good success, but is not suitable for any other. Eight or ten tons of bullion are already piled up in the building, but its value is not known. Jos. Watson, Jr., has finished a very complete smelting establishment for reducing galena ores. His furnace is on the reverberatory plan, and is supplied with cupal furnace and all other necessary appliances for separating silver from the baser metals. His works are built more for the purpose of testing and proving his mines than for permanent operations. He expected to start up to-day on ores from the Baker lead, after which he will try the John Brown. The first is exceedingly rich. The latter is a heavy galena, which assays about six hundred dollars to the ton. Messrs. Herrick & Co. are putting up the fourth furnace. It is on a far larger scale than any of the others; costing twenty-five to thirty thousand dollars. The plan is substantially the same as that of the Lyon furnaces at Black Hawk. It will be ready for work in about two months. Still another is to be built up this fall by a Mr. Harris, as we mentioned above. At Argentine things look dull, most of the cabins having the appearance of being closed for the winter. Work is still going on in one or two mines. The Paymaster is being worked energetically by Messrs. Stowell & Bennett, who carry their ore down to Elizabethtown. A wagon road is very much needed to this district, and it wil not be difficult nor very expensive to build. Five thousand dollars, it is estimated, will be sufficient for the purpose. In this district (Peru) considerable work is still being done, though quite a number of prospectors have left. Probably not less than seventy-five leads have been sunk upon this season from ten to twenty feet. A few men will winter here with the intention of continuing work upon a few leads. Next year we hope to have facilities at hand for proving ores as well as mines. The little mining camp of Tarryall has shipped, by express, for twelve to fifteen thousand pounds of gold (worth $25 50@26 per oz.) per week, since last spring. Probably as much more goes out in private hands or is held by the miners until the close of the season. One bank claim, working three men, has yielded regularly over a pound of gold per week. Another has given fifteen dollars per day to the man. Still another, which averaged a less amount for the season, yielded twenty-five dollars per day to the man towards its close. Another season will give a large amount of gold from this neighborhood, as well as from the Blue River country in the vicinity of Breckenridge.....The same paper says: F. N. Bogue, of Idaho, informs us that Dr. Holland, of Trail Creek, Clear Creek county, is running a stamp mill for custom work. The mill is doing a good business for the different miners, and all are well pleased with its operations.....The Whale mill, the largest in the Territory, is now running. The South Clear Creek gold and silver mining company are working on Spanisb Bar with good returns. Considerable mining is also being done on the bars below Idaho. Mr. Bogue is of opinion that, from the work now being prosecuted, there will be more money taken out of Clear Creek this month than there has been for the past three years.....Editorial correspondence of the Black Hawk *Journal*, October 23, runs thus: The Beaver Creek mining company have been at work here four years getting a bed-rock ditch and flume in to the richer portion of the gulch. Their flume is 20 by 24 inches in size, three-fourths of a mile long, and its upper end now within a yard of the bed-rock. The work is the most extensive of that description I have yet seen.....The "Excelsior" crops out along the edge of a cliff one thousand feet above the town level. The company, the Colorado G. M. Co. of Philadelphia, have one thousand feet on it, upon only two hundred of which they are working. The vein is 17 feet wide, quartz and dirt, and averages, without counting in a small but regular formation of silver of $5,000 a ton richness, $70 a ton. Very rich copper ore is coming in at one hundred and thirty feet depth—seventeen per cent..... Professor Du Bois is now sinking two shafts on the Orphan Boy, at Mosquito, for the "South Park Gold Mining and Exploring Company," the purpose being fully to determine the course of the lode, whether that and the Kitty Clyde are the same or separate veins, or whether the latter is a spur of the former. .....At Montgomery, the Pioneer company is just starting its new mill.....Two or three companies have been mining by ground sluicing and hydraulics within three miles below Hamilton. One of them has worked into the creek bank four hundred feet, it paying better the further he goes, and last week his return was $23 to the hand per twenty-four hours. .....The *Register* has seen a retort of gold which weighed eighty-five ounces. It was run by the Quartz Hill Mill, from eight and a half cords of ore taken from the Adaline lode. The depth of the shaft from which the ore was taken was only fourteen feet.

Minnesota.

An exchange, speaking of the Vermillion mines, says: The officers of one of the companies call attention to certain misstatements in regard to their mines. They state that assays of ore have frequently exceeded $100 per ton, and that in special cases $1,000 per ton has been realized. They also state that a good winter road has been constructed from Superior City to Lake Superior, over which supplies are transported at $50 per ton, and that in a little time a good summer road will be opened. By the Upper Mississippi rout they have water communication, with only four portages, the aggregate length of the four being eight miles. They also state that, to the best of their knowledge, but eight companies have been organized, instead of sixteen. Geologists who have examined the mines in question testify to the accuracy of the statement made, and also to the substantial character and value of the investments made in these mines. While they would not encourage false expectations in regard to the Vermillion Region, they say they are fully convinced that the region is pierced with many true fissure veins, and that the indications thus far are favorable and encouraging.

Nevada.

The Comstock.—A letter from Virginia City, Oct 9th, runs thus:

EDITOR JOURNAL OF MINING:

SIR—A few items concerning the Gould and Curry may interest your readers. The company are about to put up new pumping machinery at the mine, and as the mill is supplied with water from the mine, it will run but a part of the stamps and pans. For the two weeks following, repairs of the mill's beam engine will be going on, so that the mill will not be running up to its full capacity for a month or six weeks. The yield of the mine for the month ending Oct. 4th, was $139,000. Most of the ore was reduced at the Gould & Curry mill, and a part was hauled to Dahl's mill in the Washoe valley. "Wildcat" does not find this country pleasant for him now.....The Gold Hill *News*, of Oct. 11th, says: Outsiders, looking only to the stock board reports from San Francisco, would naturally suppose that said report included all and several of the claims worked on the Comstock ledge. Such is not the case. Several of the claims or mines, and among them the most successfully worked, and profitably too, so far as investments are concerned, located in Gold Hill, never figure at all at the stock boards, because the shares or interests are in a few hands, and they are not disposed to make a "splurge." They quietly pocket their dividends, are reconciled to the situation, have no stock or shares to dispose of, and hence their claims are never reported. This is particularly true in regard to the Kentuck mine, one of the very best located on the Comstock ledge. Sandwiched as this claim or mine is, between the Crown Point on the west, and the Yellow Jacket on the east, two of our best paying mines in Gold Hill, it would be strange, indeed, if the Kentuck mine should not be a profitable institution. They are now down to a depth of 362 feet, and from every drift run splendid ore is developed. Where nothing was expected, in running drifts for the purpose of ventilation or otherwise, much to the surprise of Superintendent Wright, and to Foreman Johnson, rich ore has been struck. Their average yield daily, of rock brought to the surface, is 120 tons. It is all first-class. One hundred men are now constantly employed below ground in the development and working of this

mine.....The following list of mills in the neighborhood of the great Comstock lode, with number of tons actually crushed per month, etc., is from the San Francisco *Scientific Press*:

MILLS LOCATED IN VIRGINIA CITY.

NAME OF MILL.	T'NS PR. MONTH.	NO STMPS.	
Summit	900	20	11 Wheeler pans, 4 settlers, 1 small Varney pan and settler, 1 agitator.
Central	670	13	4 Hepburn pans and 4 settlers, working 500 tons wet; 4 furnaces and 6 barrels, working 170 tons dry.
Ogden	1,000	22	12 Wheeler pans and 4 settlers.
Empire	800	21	24 Knox and 2 Wheeler pans.
Hoosier State	400	8	24 Knox pans.

MILLS LOCATED ON 7-MILE CANON.

Mariposa	600	12	6 Wheeler pans, prospecting battery, 2 Knox pans, 3 large settlers.
Chas. Land's	1,000	20	1 Blake's breaker, 10 Wheeler pans, 5 settlers, and 2 grinders for grinding amalgam and working slum.
Bassett's	700	16	4 improved Wheeler and 2 Hepburn pans, 2 tubs and 3 settlers.
Winfield, or Booth's	1,000	18	1 Blake's breaker, 8 Hepburn pans, 1 grinder and 4 settlers.
Gould & Curry	3,502	80	39 Hepburn pans, 3 Varney pans and 21 settlers.
Empire State	700	15	2 Hepburn, 2 Wheeler, and 20 4-ft Knox pans.
G. Atwood's, Fly's, Deland's	600	16	26 Knox pans, 2 Wheeler pans, and 2 settlers.

MILLS IN GOLD HILL AND GOLD CANON.

Eclipse	700	15	8 Hepburn pans, 2 grinders, and 4 settlers.
Crown Point	250	8	13 Knox pans and tubs.
Rhode Island Cr Pt Co	1,350	25	8 Hepburn and 10 7-ft Knox pans.
Union	400	14	14 tubs and 1 agitator.
Gold Hill	475	14	24 Knox pans, 6 66ft tubs, and 4 settlers.
Sapphire	800	16	56 Knox pans.
Petaluma	300	8	18 Knox pans.
Imperial	1,100	44	74 Knox pans.
Empire	900	16	12 Wheeler pans, 6 settlers and 2 concentrators.
Marysville	500	9	30 5-ft plain pans and 2 agitators.
Douglas	450	10	26 plain pans and 1 agitator.
Atlas	750	15	8 Hepburn pans and 4 settlers.
Piute, Piute co	1,200	20	12 Hepburn pans, 6 8-ft settlers, and 1 grinder.
Pacific, Alpha co	1,300	30	15 Wheeler pans, 5 large settlers and 2 grinders.
Succor	600	20	2 Hepburn pans, 24 Wakelee flat-bottom pans, 1 settler and 1 agitator.
Confidence	650	12	8 Varney pans, 5 settlers and 3 agitators.
G. C. Reduction	600	15	6 Hepburn and 4 5-ft flat-bottom pans.
Phœnix No. 1	500	16	6 pans and 4 settlers.
Eastern Slope	550	12	6 Hepburn pans and 3 large settlers.
Swansea	600	12	22 6-ft tubs, 3 settlers, prospecting battery and pan.
Excelsior	530	10	18 Knox pans and 1 settler.
Sacramento	550	12	12 7-ft iron pans and 1 agitator.
Weston's	700	15	9 Wheeler pans, 5 settlers and 1 agitator.

MILLS ON CARSON RIVER, FROM EMPIRE TO DAYTON.

Mexican	1,260	44	12 Hepburn pans, 4 furnaces and 10 barrels. By wet process, 1,000 tons; by dry process, 200 tons.
Yellow Jacket	2,300	40	30 Hepburn pans, 15 settlers, 2 agitators and 2 grinders.
Brunswick	600	8	8 Varney pans and 4 agitators.
Merrimac	1,350	20	15 Wheeler, 4 Knox and 1 Varney pan, prospecting battery and pan, 6 large settlers, and 10 agitators.
Vivian	750	16	8 Wheeler pans, 4 settlers and 1 agitator.
Santiago	1,100	24	1 Blake's breaker, 14 Wheeler and 4 Hepburn pans and 9 settlers.
Eureka	1,100	20	10 Wheeler pans, 5 settlers, and 2 agitators.
San Francisco	7500	10	3 Hepburn pans and 7 tubs.
Franklin	500	10	2 Wheeler and 2 Hepburn pans, 5 tubs and 2 settlers.
Island	500	10	10 Varney pans and 3 settlers.
Ophir Co 's	1,200	24	12 Hepburn pans and 6 settlers.
Dayton, No. 1	500	20	6 Wheeler pans, 2 8-ft settlers and 2 agitators.
Dayton, No. 2	800	15	8 Varney pans, 4 settlers and 3 agitators.
Birdsall & Carpenter	2,400	30	20 Wheeler pans, 10 large size Wheeler settlers, 5 agitators, 1 grinder and 1 Blake's rock breaker.
Golden Eagle	500	10	24 Knox pans and 1 settler.
Illinois	500	20	6 Hepburn pans, 2 settlers and 3 agitators.
Imperial Co.'s Rock Point	2,400	56	Blake's breaker, large size, 14 Hepburn pans, 27 7-ft tubs and 7 7-ft settlers.

MILLS AT AMERICAN FLAT.

Bay State	1,400	23	14 Wheeler pans and 7 settlers.
Bigby & Co.'s	400	10	5 Varney pans and 4 settlers, 1 extra pan and settler for tailings, and 1 barrel.

MILLS IN WASHOE VALLEY AND VICINITY.

Temolee	800	15	12 Wheeler pans and 3 large settlers.
Manhattan, N. Y. co.	1,300	24	16 pans, 8 settlers and 1 grinder.
New York	1,300	24	16 Varney pans, 8 settlers and 1 grinder.
Atchison, Savage co.	1,200	20	1 breaker, 16 Wheeler pans and 8 settlers.
Minnesota, Savage co.	1,000	16	1 breaker, 12 Wheeler pans, 6 settlers and 1 agitator.
Buckeye	700	10	1 breaker, 8 Wheeler pans and 4 settlers.
Ophir Co.'s	450	72	Working only 36 stamps. Freiberg process—9 furnaces, 24 amalgamating barrels, work 43 men; full capacity of mill, 750 tons.
H. Dall's	1,725	60	2 Blake's breakers, 8 furnaces, 20 barrels, 6 Varney and 4 Wheeler & Randall pans.
Total	62 mills;	53,787 tons;	1,226 stamps; 919 pans.

The above is a correct list of the mills now running on ore from Virginia and Gold Hill districts. There are a few small mills and arastras running irregularly, and not enumerated in this list, and working about enough ore to compensate for stoppages of the other mills. There are about a dozen mills now idle, some of them undergoing repairs.

Austin.—The *Reveille* of Oct. 10th and 11th, after telling at length how badly the miners of the Manhattan company have been managed, says: Under the present management, the work on the North Star has been resumed by Superintendent Frost, one of the original discoverers of the mine, whose thorough knowledge of the course of the vein led him at once to the point where its rich deposit had been passed for lost. The zigzags have been made straight, and the levels converted into suitable avenues for a track and proper mining. The vein is now exposed for a length of 320 feet, disclosing mineral equal to the finest yet discovered in the district. It is thoroughly blended with ruby, and is generally the richest quality of antimonial silver ore. The shaft has already been pushed fifty feet below these levels, and will be sunk until a depth of seventy feet has been attained, at which point levels will be run for the vein. When the preparations of the company are completed, they will be able to extract daily from this single mine ten to fifteen tons of ore. The shaft is furnished with a powerful pump, which easily keeps the work free of water; the ventilation is perfect, and the mine in good condition for continuous working. An idea of the size of the superb vein of the North Star will be conveyed when we state, that there are specimens in the office of the company, which have just been extracted from the recovered ledge, weighing 500 pounds and upwards, and measuring three by four feet—masses of richest sulphuret ore, assays of which range from $6,000 per ton..... Emerging from the shaft of the North Star, we entered the incline of the Oregon, and were soon astonished at the melancholy exhibition. Gophers had been at work here, too; gophers of the worst class; scientific gophers. Thousands of dollars had been expended in confused and intricate cutting and harrowing, until wildest chaos had been reached. For do but think of it. The course of the vein is nearly east of west, or exactly one point north of east and south of west. The vein had slipped through the fingers of the workers, who sought in vain to recover it. A scientific man—a graduated gopher—who controlled the destinies of a neighboring mill, was called in to survey the ground and furnish a plat. He did the work as requested, and gave them as their true line of working to recover the vein, a course directly southeast. They worked on this line all summer, penetrating a distance of 130 feet, and would finally have tumbled into the Colorado river, had not the friendly sheriff again interposed, and checked the progress of the wild excavation. When Superintendent Frost came into position under the present management, he perceived at a glance how egregiously faulty the working of the mine had been, for he was its discoverer and constant worker for almost years, and he was as familiar with its course and peculiar faults as he was with his right hand. He obtained the reluctant consent of the general agent of the company to alter the line of working, which he contended was wide of the mark. To demonstrate the soundness of his judgment, he went into the scientific level twenty-five feet, and then drove a cut eighteen feet due north, when he exposed the original and beautiful vein of the Oregon, just twenty-five feet from the line of the main incline. So confident was Frost of his success, that he had declared to his principal, he would leave the country for ever if he failed. The splendid vein, which had been lost sight of by the gophers, is three feet thick, and from the level to the surface there are 135 feet wholly untouched, which may be stoped out at will. The mineral is a handsome silver sulphuret of a high grade and is profusely interspersed with beautiful crystals of Stephenite. As soon as the North Star and Oregon have been put in good shape for uninterrupted working, it is the intention of the agent to resume work on their third mine, the Southern Light, the vein of which had also been temporarily lost. The vein of the latter is identical with that of the Savage, which, thanks to intelligent management, is one of the accomplished successes of Reese River.

Reveille.—This district, says the paper of the same name, lies directly on the route of the projected toll road from Austin to Pahranagat via Hot Creek, which is destined to be the grand higway from the central to the eastern portion of the State. The ledges occur in granite, and are overlaid by a limestone incrustation varying in depth from a few inches to even six feet. The course of the veins has been observed to be invariably northwest and southeast. Several companies have already prospected and made locations in different portions of the district, until probably nearly 100 have been made. Two of the original companies have located some twenty ledges, of which we will mention only the principal, or those upon which sufficient work has been done to determine their character. The ledges are situated on hill—or rather two hills, for it is cleft by a shallow ravine—called the Mediterranean and Crescent, which may be properly characterized as a vast deposit of mineral, that may be quarried as granite and marble are quarried. None of the ledges have been accurately defined, on account of their monster proportions and recent discovery, but enough has been done to establish their value. The Crescent ledge lies on the hill bearing its name, and 106 feet of its huge width have been discovered. Some rod and a half from the point where work has been done on the ledge, there is an immense outcropping extending 1,000 feet by actual management. The Mediterranean is situated on the summit of the division of the hill bearing that name, and crops out boldly 200 feet. On the surface the rock is very much decomposed, and discloses a profusion of horn and native silver, and two excavations of eight feet in depth have been sunk on the ledge, which is known to be 60 feet wide. Located on the same hill are the National and Chieftain, the former carrying a width of 45 feet, and cropping palpably for 3,000 feet, and showing excellent mineral along its entire course; the latter exhibiting a fine vein 15 feet thick, and well loaded with the precious mineral. A grand ledge, named the August, after the month in which it was discovered, lies on the same hill west of the Crescent, from which it is separated by a slight ravine. The ledge is 73 feet thick, and exhibits mineral of unsurpassed beauty and richness. There is scarcely a face on any piece, however small, in which the pure sulphuret of silver does not exist abundantly. Other companies have made locations on this hill, all of which show excellent ore on the surface. Across the ravine about 700 yards directly north of the Crescent, lies the Atlantic ledge, 40 feet wide, chock full of horn silver, and cropping the entire length of the location. A mile and a half south of the Mediterranean Hill, is situated the Antarctic, a ledge of fifty-six feet thick of solid mineral, which crops bold and grand "away down south," as our informant phrased it. In addition to these, the two companies own a number of other ledges, many of which look as promising as those we have specially noticed, but they are wholly undeveloped. The mineral developed in the Reveille district, and which these ledges contain in such munificence, is of the finest cupriferous variety, abounding in the pure sulphuret of silver, the dark gray points of which dot the surface like plums in a rich pudding. In the judgment of intelligent metallurgists, the ore may be worked to the best advantage without the great expense of roasting, which is a considerable point of economy in silver mining. In addition to the grand treasure of mineral, the district is surrounded by every facility for cheap mining and milling.

Pahranagat.—The Salt Lake City (Utah) *Vedette* of Oct. 17th says: Mr. Edwin Lobach arrived in this city from Pahranagat, on Monday, and reports that two steamers from San Francisco have arrived at Calville, bringing with them the quartz mills of Messrs. Congar, Paymond and others..... We were yesterday shown, by his Excellency, Governor Durkee, who has lately returned from Pahranagat silver mining district, two shining silver lumps which were got from the "Green Monster" ledge, partly owned by a New York company. One of these bullion chuncks weighed forty ounces. It contained about four ounces of gold. The Governor is satisfied that the Pahranagat country, be it in southwestern Utah or southeastern Nevada, as the case may be, is one of the very richest mining areas in the West, and will so prove to be before many seasons hence. Much industry and mining enterprise is being exhibited there this Fall, and a large amount of capital is coming thither from the East..... E. D. Butler writes from Pahranagat mines, Silver Canon, Oct. 1st: Mr. Saymond has a five stamp mill which will be running inside of three weeks, and he has also a ten-stamp mill at Call's Landing, which, with two others now there, will be put in operation as soon as they can be freighted up. There are now from 800 to 1,000 tons of ore awaiting the arrival of the above named mills, to be crushed. There has been taken from the "Lilly" and "Jessie" about 10 tons of ore, which from an assay made by Messrs I. B. Pike & Co., gives per ton of 2,000 lbs., 1,1382 07 100 oz. of silver, value $1.786 66 coin; also from the "Willy" 10 tons, assaying per ton of 2,000 lbs., 1,202 85-100 oz., value $1,544 55 coin. An assay made by Messrs. Behan & Mulitor of Great Salt Lake City, from the above named claim, from 8 tons of rock give ½ lb. of metal and 80 per cent. silver, balance copper. Work on all the claims is progressing slow but sure. There are five companies from New York and one from San Francisco represented by the agents now there, and everything appears bright for a rich return the coming spring. Mr. Raymond deserves great credit for the indomitable energy he has exhibited in bringing in machinery and in other ways causing to be opened this rich mining region, and if steady application and strict attention bring riches he cannot fail of reaping a generous reward. Now is the time for capitalists to invest in these mines, as by spring they will be so well developed that a "poor man" will be enabled to work his claims without being compelled to sacrifice the greater portion of his interests.

Danville.—In this district, says Mr. Broderick, some twenty-five locations have been made on apparently good ledges, and the prospectors are still pushing ahead. It is the intention of Mr. Broderick's company to test their most promising ledges, and for this purpose they are busy extracting ore to be carried to the mill and reduced. From its present development, they regard the Vanderbilt as altogether their chief

mine in the district, from which there are now on the road to the Keystone mill six tons of ore.

White Pine.—One ton of ore from the Enterprise ledge in this district, worked at the Keystone mill yielded $111 53.

Michigan.

From the Houghton *Mining Gazette* we take the following: The total September product of the Portage Lake copper mines was 556 tons, 164 lbs. of which the Quincy mine yielded 120 tons 1,210 lbs.; Franklin, 101 tons 700 lbs.; Huron 81 tons 1,540 lbs.; Pewabic, 75 tons 230 lbs.; Calumet, 45 tons 1 lb.; Hancock, 35 tons 120 lbs.; Isle Royale, 33 tons 1,498 lbs.; Grand Portage, 28 tons 623 lbs.; Concord, 18 tons 1,575 lbs., and Albany and Boston, 16 tons 667 lbs..... The regular operations of all the mines have been more or less retarded by the wet and unpleasant weather..... Reports from the Seneca are very encouraging notwithstanding they do not succeed in finding the Calumet conglomerate.....At the Shelden-Columbian one head of Ball's new stamps is up in place, and will probably commence work early next week, when the performance of the new stamps and Collum's washers will be duly noted..... The Mendota and Meteor mining companies, and the Lac La Belle Harbor Improvement companies, we learn, have been consolidated under the name of the Mendota Land and Mining company, having in all 110,000 acres of land. It is the intention to work two or three parties this winter, and in the spring active and extensive operations will be resumed at the Mendota.....It is currently reported this week that the Delaware mine has or is about to be sold to a New York company, who intend resuming operations this Fall. We also learn that the Pennsylvania bonds have not yet been issued.....The Frontignac is the name of another new mine about being oaganised on a half section of land lying immediately north of the Calumet, and explorations have already been commenced under the direction of Mr. Scott, the veteran explorer, and Capt. John Ryan of the Hecla, under the superintendence of Ed. J. Hulbert..... For some time past there have been rumors of the discovery of another copper-bearing conglomerate, located somewhere in or near the Isle Royale group of rock, and that it could be found on the property of the St. Louis mining company. Much has been related of this belt, its richness, etc., but so far as we can learn it has not yet been anywhere found in place—nothing more than boulders have been discovered. The first of these boulders were found by Capt. Edwards in the fall of 1864, while making explorations on section 9 and 16, on the line of the Isle Royale lode north as carried out from the workings on the Concord, Arcadian, and Edwards properties. The boulder was found in the bed of a small stream, and in appearance is exactly the same as the Calumet rock; an alalysis showing it to contain 11.75 per cent. of copper. Afterwards other pieces were found in the same stream, all having the same resemblance in composition and metallic contents, but beyond the report that one man had found the belt in place, and wished to sell the secret, no further discoveries have been made until a couple of weeks ago when boulders were found on the Concord property, and in such a regular course as to induce the belief that the belt exists somewhere on that property, and to the Isle Royale lode. Some of the boulders found were very rich in copper, while others having coarser pebbles, were quite poor and their regular occurrence along the range induced the belief that the belt could be found rich somewhere on the location. A party of men have been set at work exploring for the belt, but had not found it at last accounts, though many more rich float boulders have been found, and Capt. Fleige feels quite sanguine of unearthing it if this wet weather does not drive him out of his pits, and compel him to postpone further examination till spring. These boulders unquestionably came from some other belt than that known to exist some six hundred feet east of the Isle Royale lode, and it is barely possible they belong to the Calumet, though the evidences are strongly in support of the view that they have come from an intermediate belt, and which may some day prove a rival of the now unapproachable Calumet..... Beyond the astonishing facts that the Calumet and Hecla surpass any mines we have seen in richness, and that they grow very much richer every foot sunk down, we cannot add much to our previous reports. We were surprised at the smallness of the opening in comparison with the amount of copper taken out, and after finding that the conglomerate is yielding over five tons ingot copper to the fathom of ground broken, we are very loth to attempt any computation of the value of even one hundred feet length of the lode. As we stated two weeks since, great difficulty has been experienced in breaking the large rocks small enough to go into the rock-breakers by the usual hand process, and there has been purchased a mammoth steam hammer nearly double the size of the one used at the Huron mine. The Calumet hammer weighs 6,800 lbs. and has a lift of nine feet, and if anything will break these copper cemented rocks we think this hammer will do it, and save a large force of men and a considerable amount of money. On the Hecla three pits have been put down to the lode, and in all of them it was looking as well as on the first opening of the Calumet. In the south pit, about fifteen hundred feet from the Calumet main pit, some little blasting up has been done, and there was lying on the surface about fifty tons of fine smelting rock, and the pile growing at the rate of five tons per day. An engine is being set up to hoist rock and pump water out of the pit, and in a short time Hecla will be sending to the smelting works as much rock daily as the Calumet..... During the past week a contract has been made with W. W. Williams & Brother for the dredging of the outlet channel of Torch Lake sufficiently large for the passage of steamboats. The work is to be commenced at once, as soon as the dredges can be brought around from Lac La Belle, where their work is now about finished. The cost of making this improvement will be about sixty thousand dollars. The necessity of the work has been rendered imperative by the manifest importance of Torch Lake as a mineral shipping point for the Calumet, Hecla, and other mines which may spring up midway on the range between Hancock and Eagle River. The newly proposed railway from these mines to the head of the lake will bring the copper rock there, from whence it will be loaded on scows and towed by tugs around to the smelting works at this place for reduction.

Montana.

Correspondence of Sept. 21st, from the Yellowstone canon, says that the new diggings have been struck seventy miles above here on Bear Creek, a tributary of the Yellowstone. Several hundred persons from Gallatin Valley have packed up through the canon to the scene of excitement, and it is reported that a general stampede will ensue from the large mining camps. Bear Creek is declared to be a rich discovery, together with a number of smaller gulches adjoining, though the merchants need not speculate on it too heavily before they hear something further from me, as I shall visit these diggings in a few days .. From the Montana (Virginia City) *Post* of Oct. 13th, we take the following: Gaston, Simpson & Co.'s mill in New York district, cleaned up $1,700 on last Thursday, out of thirty-five tons of ore, in five days' run.....Messrs. Sweeney & Co., cleaned up last Saturday, and were made happy by finding that one thousand seven hundred and fifty dollars had been the reward of a weeks' run, with a single shift, on Bummer Dan's bar. When McEvily's ditch is completed, a large number of miners expect to go to their bars and do likewise .... Mr. Thomas Burden has nearly completed a good road from the Silver Bow road to the Highland diggings. It is about twelve miles in length, and will be of great utility to gold seekers .....A new discovery of gold was made last week in Brown's Gulch, about five miles from Virginia City. Nuggets weighing eleven dollars have been found, and the gold is coarse and in encouraging quantities. A district was organized yesterday, and the prospect of claim owners is flattering in the extreme. There were few present yesterday who remembered the great excitement caused by the discovery of gold there in 1863; and though a few sanguine and contented miners have worked there since, yet the gulch had been substantially abandoned for more than three years .....Correspondence from Helena, Oct. 9th, runs thus: Captain Fiske is in town, from Sun river. The Minnesota boys who went to that region have abandoned the enterprise, and are now camped at widow Durgan's on the Ten Mile. Their report of the Sun river country is "vanity of vanities." The Ten Mile Ditch has been pushed forward vigorously during the past week, but it is doubtful, to say the least, whether it will be completed this fall. There is a great deel of work still to be done on it; among other things a tunnel of over fifty yards through the hill west of town, which is about half completed, and fluming without limit. The miners in Lover's Last Chance are having a better supply of water than formerly, and are consequently seeing better times. The work which has been done there during the past two or three weeks has materially changed the appearance of the ground. There are reports coming in almost every day of rich developments in quartz, and though it is well to take such stories with considerable allowance, it is very probable that many of them are based upon fact and truth..... In a letter from Bannack, Oct. 8th, the writer says: St. Louis company are smelting fifteen tons of ore per day at Rattlesnake; Prof. Eaton's blasting furnace is about ready for full operation; the Butterfield mill is making good weekly returns; the Bannack Ditch and Mining company are taking out over a thousand dollars per week; Messrs. Kirby & Clark will have the largest mill in the Territory running in a few weeks; and hundreds of tons of rich gold ore ready, besides furnaces which will be put up next year. The Duran company are erecting a furnace, and have a 24-stamp mill on the ground ready for use if their ores require it. The miners in the gulches here, and at Horse Prairie, have been doing well, and Professor McComb has a powerful hydraulic which he has now tested and will set to work at once. Large quantities of dust are also beginning to come in from the Salmon river mines. Last spring we had but two little shops; now there are three wholesale and retail stores, and five retail, besides three or four saloons, several boarding houses, hotels, etc. To sum up, mining and mercantile affairs, labor and capital, are all in a healthy and prosperous condition. Everybody can get work at good wages, capital can find good investments, and merchants ready sale for their goods.

Georgia.

The Atlantic *Intelligencer* of Oct. 21st, says: A few gentlemen of this city, several months ago, with a desire in measure to test the mineral resources of this region, organized themselves under the name of the "Atlanta Mining and Land company;" and that since then, they have been quietly, but steadily at work, obtaining leases of valuable mineral lands, and testing, through their experienced agents, such mines as gave assurance, by surface indications, of rich mineral deposits. This company is composed of wealthy, intelligent, and influential citizens. Its President is John Rice, President Georgia National Bank; its Vice-President, R. P. Zimmerman; its Secretary, J. R. Barrick; its Treasurer, S. A. Verdery; its Board of Directors, S. R. McCamy, V. A. Gaskill, Dr. D. C. O'Keefe, and James McPherson; its General Agent, Col. J. T. Taylor. For several months past Col. T. has been actively engaged obtaining leases for the company, and in the discharge of other duties imposed by his position. His intimate knowledge of the mineral resources of North Georgia, added to a large experience in the practical operations of mining, has enabled Col. Taylor to secure some of the choicest mines in the country. These are located mainly in the counties of Cherokee, Paulding, Bartow, Carroll and Cobb, covering more than 2000 acres judiciously distributed over that auriferous region. From the General Agent's report to the company it appears that his labors, of late, have been extended in testing a mine on one of the company's leases in Paulding county, which bids fair to prove one of the richest ever discovered in the State. As far as tested, this mine, we learn, yields an ounce of gold to each foot of dirt, with the testimony of experienced miners to the effect that not more than one-half the gold has been gathered from the tested dirt, in the absence of the necessary machinery. The shaft, as yet, has been sunk but 15 feet in depth. Near the surface the vein is slate, further down changing to quartz, increasing in quality and compactness as it descends. It is the opinion of experienced miners, that this ore is richer than any west of Dablonega, and that it is inexhaustible. A peculiar advantage of this mine is said to be the facility with which the slate pulverizes, much of it crumbling to dust whilst being dug. These facts, in connection with the richness of the ore, warrant convictions of the immense value of the mine.

Kansas.

Dr. Robert H. Lamborn writes: We drove in the early morning through the well-graded streets of Leavenworth, to a shaft the citizens are sinking on the banks of the river for the purpose of reaching coal. They are now 200 feet deep, having reached this point after passing through about six inches of coal. The expectation, founded on a section of strata taken in Missouri, was that they would strike a good seam at a higher level; but this expectation being disappointed, the belief now prevails that they will now be compelled to pass through several hundred feet of rock known to be unproductive, before they enter the lower measures where good seams of coal have been found. The existence of these seams is about to be determined by boring in the bottom of the shaft; one hundred and twelve feet have been pierced without results. The perseverance of these explorers is deserving of favorable issue. They have already spent over $40,000 endeavoring to solve this problem of fuel, which is now more important to the people of Kansas than any other of a material character. The boring will be sunk several hundred feet further into the rocks. One hole had already been abandoned on account of the tools becoming fastened, and the second was progressing slowly, no one connected with the enterprise having seen the process of drilling elsewhere. The location of this shaft has been chosen with skill on the bank of the Missouri, above the surface, at a convenient height for depositing coal upon the deck of passing steamers .....After ten miles drive, leaving Leavenworth to the eastward, we reached the coal mines of the little Stranger Creek. Here an English miner has driven some short drifts in the bank of the stream, and is taking from an eighteen-inch seam a good quality of bituminous coal for the Leavenworth market. He receives 32 cents per bushel in the town, and can take out twenty bushels per day per man. He pays 12 cents per bushel for digging, 12 cents per bushel for hauling, and 2 cents royalty to the owner of the land, leaving him a profit of $1 50 per ton. It is probable that this seam extends under a large portion of the adjoining lands of the Union Pacific R. R.

Limestone, which is found nearly everywhere in Kansas, is one of the important features th State, supplying an inexhaustible source of buildin

material and quicklime, yet rarely rising in such masses as to interfere with the plow.

Pennsylvania.

A correspondent writes from Slatington, Oct. 30th: Many visitors come to purchase slate, while others come to purchase and lease slate tracts. Several slate properties have changed hands of late, and handsome sums will be realized by the sale of properties this week to parties from abroad. At present the slate business is very brisk, and the different companies are doing their utmost to meet the demand. The principal quarries now in full operation on the west side of the Lehigh, are owned and worked by the following parties: Keystone quarry, H. & D. Williams; Lehigh Slate company, D. D. Jones; Sunny Side quarry, H. Williams; McDowell Slate quarry, Sock's Slate company, Hope quarry, Blue Mountain quarry, Morgan Jones; Pit Hole quarry, and about twenty new quarries which are worked with success. On the east side of the river are a number of quarries in working condition, and are producing a large amount of slate. To give you an idea of the increase of the business, I will state that the quarries within five miles of Slatington will be able to turn out no less than 500,000 squares of roofing slate, against 65,000 in 1865. The Lehigh Slate company's mantle works are taxed to the utmost to supply the demand. H. & D. Williams, R. McDowell & Co., Morgan Jones, and Lock's Slate company, are extensively engaged in the manufacture of school slate. On the east side of the river Henry Harper is also extensively engaged in the manufacture of school slate, as well as George Coffin, and a manufactory the name of which I have forgotten; all the productions of these manufacturers rank first in the market. In a few days I will be able to give you the number of school slate manufactured here .....The wells of the Venango oil region continue to yield abundantly.

Utah.

The Salt Lake *Vidette*, of Oct. 18th, says: The latest news from the Stockton mines continues of the most favorable character. The large reverberatory furnace of James Finnerty was to have been running by this time. Mr. Gibson's furnace is turning out metal daily, and Monheim & Johnson have a large water power smelter, which started upon the 11th. Chase & Yoachum have also constructed a new furnace which was to have been started yesterday..... Dr. O. H. Congar writes from Little Cottonwood Canon: "We have no ambition for the honor, if any, for the first silver brick out of the mines of this Territory; if so, it could have been produced months ago; neither do we care to mislead the public prospectively by hurrying out a few ounces or pounds by hook or crook. Our operations aim entirely at permanent and practical results, and unless we can obtain them we shall as readily apprise the public of the fact, as we should be happy to, of an entire success. Those at all acquainted with metallurgical operations are very well aware that there are always almost innumerable little adjustments to be made, fire bricks and clays to be tested, adaptations of parts, etc., before practical results can reasonably be expected, and it is these little matters that we are now attending to that has delayed us a few days in obtaining the desired results. In a very short space of time we hope to fully satisfy the public that silver mining, in the very extensive and rich argentiferous mines around this city, is a practical success.

Australia.

Mining in all parts of Australia looked well at last accounts.....With reference to the Cape Breton mines it is stated that one hundred thousand tons of coal were exported during the last year, by the General Mining Association, from Sydney. Three principal seams are worked there, varying from four feet eight inches, to six feet four inches. The Lingan mines are also owned by this association; 300 men are employed here, and upwards of 40,000 tons have been shipped this summer. The International company have a mine not far from Lingan, from which 10,000 tons were shipped this year. It is calculated that if this company were to raise 100,000 tons a year, six hundred years would pass before its resources would be exhausted. The Little Glace Bay colliery is owned by an American company, employs one hundred men and shipped this season 40,000 tons. From Block House, Gowrie, and Cow Bay collieries, 45,000 tons have been sent annually. There are five or six other working mines on the Island of Cape Breton.

The Murphy Mine Reduction Works.

The Nye county *News* of Oct. 6th, contains a description of the extensive reduction works recently erected near the Murphy mine, Twin river district, Nevada, which is worthy of attention as showing the progress of milling and metallurgy in that distant spot. The engine and boiler room, says our authority, is a substantial stone building, 44 feet long by 32 feet wide, and 16 feet high. The pan room, which is level with the engine room, is a stone building 50 feet long by 44 feet wide, and 22 feet high. The roofs of these buildings are connected at right angles, in such a manner as to combine beauty with economy. The furnace room is an immense building, 150 feet long by 52 feet wide, and 12 feet high. The walls are six feet thick of solid masonry, to support the heavy embankments against which they are built. It is well lighted with a tier of dormer windows. A neatly constructed ventilator extends the entire length of the roof, giving it an appearance of beauty and comfort rarely found in such buildings. Workmen will find but little difficulty in withstanding the pernicious fumes which escape from the roasting ore in a building ventilated on this principle. The battery room is a large building 52 feet square and 24 feet high. Its walls are supported at regular intervals by massive buttresses, which render it sufficiently substantial to sustain its vast and valuable machinery. The roofs of all the buildings are built on the self-sustaining principle, but by the introduction of a system of braces, many of the heavy timbers, and much of the expense incurred in roof-building, are dispensed with. These are the first roofs of the kind known to be built, and they are credited to the inventive genius of Mr. B. Evans, under whose supervision they were constructed. Should these roofs prove equal to expectations, a great saving will by effected in districts where building material is scarce. The furnace is the pattern known as the McGinnis furnace, ten of which have been constructed under the supervision of McGinnis & Cronin. A large flue, 300 feet long, connects the furnaces with a stately chimney stack of brick, which rises to the height of 80 feet. The foundation of the chimney is 16 feet square, of handsome cut stone, and presents a solid and beautiful appearance. The amalgamating room is furnished with six pans of Wheeler & Randall's latest improved style, which are arranged in two parallel rows. The rim of the pan is constructed of wooden staves, and the bottom rises in the center in the shape of a cone, through the center of which runs the perpendicular shaft some three feet above the top of the pan. On the upper end of this shaft is a large screw for the purpose of raising and lowering the muller, an improvement greatly needed on the old style of pan. Between the pans the settlers are arranged; they are seven feet in diameter, and there is a settler to each tier of pans. The battery, which consists of twenty stamps, is of the "knee style," and is generally conceded by those who have seen it, to be the most substantial structure of the kind ever built on the Pacific coast. The blocks on which the mortars rest are 30 by 50 inches square, and 16 feet long. Around these ponderous blocks mason work is grouted in such a manner as to render them as firm as if they grew out of the solid earth. It is justly regarded as the model battery of the State, and is well worthy of a visit by those who contemplate the erection of a first-class mill structure. The motive power for this vast combination of machinery, is a splendid engine of 125 horse-power, from the foundry of H. J. Booth & Co., of San Francisco. These reduction works are situated in a deep ravine, surrounded by precipitous and towering mountains, from the loftiest summit of which the eye may catch a bird's-eye view of the compact works below.

The Original Oil Man of Canada.

About ten years ago, a man named Pratt, who possessed in a remarkable degree the roving disposition, happened to pass through the township of Enniskillen, and seeing the "gum beds," as they were termed, shrewdly guessed there was something good to be found there. He accordingly bought 70 acres of the land in which is now the centre of the oil districts, and after having the gum analyzed at Hamilton, left the country. He went to the silver mines of Mexico and amassed a considerable fortune; from thence he struck over into Texas, where, no doubt, he found adventure enough to satisfy even his spirit, and on the breaking out of the late war, took up arms on the side of the South, and fought the Yankees for four years. In the meantime nothing was heard of him, and on the discovery of oil at Enniskillen, his estate was administered and reverted back to the Crown. About three weeks ago, however, the rover stepped into a large oil establishment, announced himself as the original old Pratt, and politely requested the *soi disant* proprietors to "clear out." Utterly confounded, these gentlemen handed over $10,000 to quiet the title, and Mr. Pratt set off for Ottawa, where he asked the Commissioner of Crown Lands by what authority his lands were taken away from him and given to others. The answer was in so far satisfactory that Pratt departed in high glee, and when the writer met him on the cars, was on his way to Oil Springs to give a number of wealthy trespassers, as he considers them, "particular scissors." He expects to realize some $200,000 in gold from the transaction, after which he will steer his bark straight for the silver mines of Mexico, introduce valuable machinery, and make his fortune. Pratt is a remarkable looking man, who might be readily mistaken for a shrewd, sunken-eyed, hard-faced and eccentric Western farmer, and his career is remarkable enough to furnish matter for a "thrilling" sensational novel. As far as we could learn, he is alone in the world, "caring for nobody, no, not he, for nobody cares for he.'—*Halifax Chronicle.*

Sodium Amalgam—Kustel vs. Wurtz.

In response to a synopsis of Prof. Henry Wurtz' paper on "Utilization of Sodium in Gold and Silver Amalgamation"—which appeared in full in the JOURNAL OF MINING, pp. 393, 409, Vol. I. and 10 Vol. II., besides subsequent correspondence on the same subject, p. 25, Vol. II.—Mr. Guido Kustel, the California metallurgist, writes to the *Scientific Press*:

In said paper (or the synopsis Mr. K. has seen) Mr. Wurtz, with a sort of self-confidence, accuses me of errors, fallacies and non-concurrence in opinion with other Californians experienced in amalgamation. Mr. Wurtz says: "Kustel has erred mainly in supposing that the purpose of the sodium-amalgam was to decompose silver ores by extracting their sulphur by sheer force of chemical affinity." The *chemical* action by which the sodium decomposes silver ores, is the only fact which can be proven as being effective in the treatment of such ores. Whenever sodium-amalgam comes into contact with silver sulphides, chlorides, tellurides, etc., the sulphur chlorine, tellurium, which is set free, is found immediately combined with the sodium in the solution, and only an equivalent quantity of silver is amalgamated—no more. Is this no chemical action? What does it matter whether this chemical action is purely a chemical one, or whether it is combined with an action which "appears" to be in a manner electric, if there is no more silver reduced than what was freed by action of chemical affinity? What practical use can be derived from that point of view which Prof. Wurtz assumes? The "highly electro-positive condition of the quicksilver," is certainly a most interesting scientific topic; but the adoption of this theory does not change the practical result of using sodium-amalgam on silver ores, of which only such combination can be reduced, perfectly, with a proportional quantity of sodium, as are free of antimony; but this equivalent quantity is just the obstacle which prevents the application of sodium for two reasons:

First. On account of its being too expensive. Second. Because it causes a greater loss in quicksilver, by rendering the latter liable to be ground to flour, (if used on silver ores rich in sulphurets, in the required proportion, in iron pans).

As to the ineffectiveness of the sole electric condition of the quicksilver; that can be illustrated by the barrel-amalgamation with common quicksilver. Here the galvanic action is produced by the positive iron and the negative quicksilver, between which the dissolved salts of the roasted ore serve as a conductor. This galvanic current assists greatly in the amalgamation of the silver; but if half of the charge should be unroasted ore, the quicksilver, although in an electric condition, does not effect the sulphurets in the least. Only the roasted ore being amalgamated, after it is reduced to a metallic state by chemical action.

Mr. Wurtz says further: "Kustel's experiments having been based upon an incorrect idea of the mode of action, have but little applicability *pro* or *con.*, and inconsistencies were pointed out in his conclusions."

I can not understand how experiments can be made upon an "idea" of the mode of action, which (that is, the mode of action), must be found out by the experiment before the idea can be formed. The conclusions which I based on experiments did not prove to be entirely correct; even the remark that *no saving* of quicksilver can be expected by the use of sodium-amalgan in treating silver ores. In regard to the "inconsistencies," in plural, Professor Wurtz says:

"Kustel's conclusions that iron pans cannot be used with sodium, for instance, is shown to be fallacious by very numerous working results now on record; in any case, it is fortunate that one negative result has little weight against concurrent positive results of many others."

When I said that "silver ores cannot be worked with sodium in iron pans," I did not mean the physical "cannot," but the pecuniary. If some people do use sodium on silver ores, without minding the result, they of course establish the fact that sodium-amalgam *can* be used in pans. A most simple experiment, however, is sufficient to show the difference between an iron pan and a wooden or stone arastra; take a small quantity of sodium-amalgam in an iron ladle or spoon (not coated with tin), and the same quantity of a like sodium-amalgam in a wooden spoon or stone vessel—both under water; it will be found that the sodium in the ladle will be used up in less than *one minute*; whilst that in the other vessel will continue for *half an hour*, and longer. The ladle appears amalgamated. If, in this case, some pulverized silver ores should have been introduced, together with the sodium amalgam, which of the vessels would prove unsuitable—the iron one, consuming the sodium in the shortest time, or the stone vessel where all the sodium is left to act upon the ore? The result and common sense will answer

Mr. Wurtz says: "the rapid and perfect collection and separation from a slime or pulp of contained and diffused silver amalgam, by the use of sodium amalgam would alone give it an obvious importance." This may be so; but although silver amalgam is not silver ore, the rapid and perfect collection from slimes cannot be executed in pans; it must be done in wooden barrels with a formidable amount of quicksilver in which some sodium is dissolved.

As to the one negative result against many concurrent positive ones, Mr. Wurtz would be differently impressed if he should visit the mills in Nevada, where silver ores are treated. Our millmen try everything, and use whatever is found economically practicable, in spite of negative writing; but the use of sodium does not seem to be applicable to the silver ores of Nevada, although it is used to some extent for the amalgamation of gold in the quartz mills of California. Where the "very numerous working results" were obtained, Prof. Wurtz did not state.

GOLD.

COMPANY.	SHARES.	STOCK.	SITUATION OF MINE.	SECRETARY & PLACE OF BUSINESS.
Acadia			Nova Scotia	H. W. Nelson, 24 City Ex., Boston
Ada Elmore	200,000	$2,000,000	South Boise, Idaho	B. Lawrence, 157 B'way, N. Y.
Amber	500,000	500,000	Greene Co., Penn	Geo. W. Grove, 276 S. Third, Phil
Albion		200,000	Halifax, Nova Scotia	H. W. Nelson, 24 City Ex., Boston
Alps	100,000	250,000	Illinois Central Dist., Col.	I. Stanton, Jr., 25 Nassau, N. Y.
Ascot	50,000	5,000,000	Sherbrooke, Canada E.	G. H. Morrison, 17 Nassau, N. Y.
Atlantic				Chas. Barrett, 13 Doane, Boston.
Atlatic & Pacific	50,000	5,000,000	Humboldt T., Humboldt co.	J. N. Sewall, 8 Broad, N. Y.
American	100,000	5,000,000	Gregory Dist.,	
American Flag	60,000	600,000	Nevada Dist., Col	H. Foles, 71 B'way, N. Y.
Astor	500,000	1,000,000	On Comstock Lode	J. Chapman, 71 Broadway, N. Y.
Baltic			Colorado	New York.
Bates & Baxter			Colorado	New York.
Bay State	200,000		Colorado	Leon'l Bangs, Boston.
Benton	100,000	500,000	Colorado	F. W. Capen, 44 Ex. Pl., N. Y.
Black Hawk	50,000	5,000,000	Gilpin co. Col.	D. Littlejohn, 81 John, N. Y.
Beacon		500,000	Halifax co., Nova Scotia	J. B. Post, 20 Ex. Pl., N. Y.
Bobtail	100,000	1,000,000		J. Stanton, Jr., 25 Nassau, N. Y.
Briggs	10,000	1,000,000	Gilpin co., Col.	D. Littlejohn, 81 John, N. Y.
Bradshaw	250,000	1,000,000	Yavapai County, Arizona	O. H. Conover, 219 Dock st., Phil
Burroughs	100,000	1,000,000		L. Bangs, 22 Pine, N. Y.
Bullion	200,000	1,000,000	Bannack, Montana	69 Liberty, N. Y.
Bullion Consoli.	500,000	500,000	Summit and Clear Creek, Col.	J. P. Whitney, 19 Lindall, Boston
Calvin	200,000	1,000,000	Clear Creek co. Col.	
Canadian				A. Call, 7 Phœnix B'l'g, Boston.
Chem. Gold & S.			Eldorado Company, Cal.	64 B'way
Church Union	200,000	1,200,000		Jesse G. Pitts, 69 Liberty
Chebucto	100,000	500,000	12 miles from Halifax	J. E. M. Gilley, Boston.
Clarendon		500,000	5 miles from Halifax	H. Doane, 41 State, Boston
Chase	5,000	500,000	Colorado	W. E. Lawton, St John, N. Y.
Central Gold M.	20,000	1,000,000	Central City, Col.	L. Bangs, 17 Nassau, N. Y.
Central Mining	200,000	1,000,000	Colorado	46 Exchange Pl., N. Y.
Chandicre	100,000	500,000	5,000 A Famine Riv. C. E.	Wm. B. Fowle, Boston.
Cobden	100,000	1,000,000	Idaho	New York.
Colonial				W. N. Ely, 7 Trav'r B'l'g Boston.
Colorado Boston			Colorado	R. C. M'Laughlin, 60 State, Bos'n.
Colorado N. Y.			Colorado	12 Pine, N. Y.
Coleman			Colorado	New York
Columbia	30,000	3,000,000	Austin City, Nevada	10 Pine, N. Y.
Consuelo Gold				54 William.
Consol Gregory	50,000	5,000,000	Gregory Dist., Col.	70 Pine, N. Y.
Cook & Kimball	1,000	150,000	Colorado	W. W. Baldwin, 25 Wm., N. Y.
Copalinshee	250,000	5,000,000	Parke co., Col.	J. C. Stocker, 137 B'way, N. Y.
Corrisannee	100,000	1,000,000	Colorado	New York.
Commonwealth			Nevada	Philadelphia.
Corrydonn	100,000	2,500,000	Gilpin co., Col.	46 Exchange Pl., N. Y.
Continental	20,000	2,000,000	Gregory Dist., Col	115 Liberty, N. Y.
Central Gold	200,000	1,000,000		L. Bangs, 22 Pine, N. Y.
Dauphin & Colo.	200,000	1,000,000	Colorado	John S. McMullin, 123 Walnut, Pa.
Day & Bushnell	300,000	3,000,000	Colorado	T. Chalmers, Jr., 20 Ex. Pl., N. Y.
de Lery		10,000,000	Chaudiere Valley, Canada E.	J. M. Winchell, 72 Cedar, N. Y.
Denver	50,000	1,000,000	Gilpin & Clear Creek, Col.	J. Wadsworth, 61 Cedar, N. Y.
Devonshire				W. Stockbridge, 74 F'klin, Bos'n
Doemeville	300,000	300,000	Colorado	J. C. Harriett, 70 Wall, N. Y.
Dorset			Chaudiere River, C. E.	F. McJimsey, 89 Wm., N. Y.
Eagle	100,000	1,000,000	Gold Dirt Dist., Col.	J. P. Davies, 81 John, N. Y.
East Bannack	100,000	200,000	Bannack City, Montana	J. Cullender, 48 Ex. Pl., N. Y.
Eldorado	500,000	2,500,000	San A Dist., 9 miles of Austin	208 S. Fourth, Phila.
Empire Mill & M				O. F. Griffin, San Francisco.
Enriquetta			Arizona	New York.
Esperanza		500,000	Star D., Humboldt co.	117 Broadway, N. Y.
Etna	50,000	500,000	Nevada Dist., Col.	C. W. Bryant, Boston.
Excelsior	20,000	300,000	Central City, Col.	J. Weatherbee, Jr., 11 P. B'g, Bos.
Fairmount	20,000	200,000	Colorado	John P. Harker, 109 N. 6th, Phil.
Famine Falls	100,000	1,000,000		D. L. Dodge, 80 B'way, N. Y.
Garrisons	100,000	5,000,000	Colorado	C. G. Mease, 29 William, N. Y.
Gem	25,000	1,250,000		H. K. Gates, 191 B'way, N. Y.
Georgetown			Colorado	New York.
Gilbert River				C. F. Jackson, 18 Phe'x B'g, Bos'n.
Gilpin				C. W. Galloupe, 76 State, Boston.
Golconda	250,000	5,000,000	Sherbrooke, Canada E.	W. H. Adams, 19 Broad, N. Y.
Gold Field				C. B. Cowling, 39 Kilby, Boston.
Gold Rock	5,000	500,000	Central City, Colorado	R. M. Lockwood, 113 Wall, N. Y.
Gold Hill	50,000	500,000	Colorado	W. T. Eustis, Boston.
Gold Mountain	600,000	6,000,000	Clear Creek Co., Colorado	25 Nassau, New York.
Gold Min'g of Col	50,000	5,000,000	Colorado	E. Latham, 23 William, N. Y.
Golden Gate	60,000	600,000	Sum. Hgld'd & Mil C. D., Mor.	J. Morse, Jr., 117 B'way, N. Y.
Gunnel Central			Colorado	70 Broadway, N. Y.
Gunnel Gold	300,000	3,000,000	Colorado	F. E. Roelfson, 78 & 80 B'way, N. Y.
Gregory	20,000	1,000,000	Colorado	Thos. Wildes, 17 William, N. Y.
Granada	50,000	125,000	Colorado	J. Stanton, Jr., 25 Nassau, N. Y.
Great Western	60,000	600,000	Russel Dist., Col.	E. Kenneys, 70 Broadway, N. Y.
Gunnel Gold	100,000	1,000,000	Colorado	F. E. Roelfson, 78 B'way, N. Y.
Halifax				A Case, 7 Phœnix B'l'g, Boston.
Harmony				Demas Barnes, 21 Park Row.
Hemit'ge Ranch	200,000	200,000	El Dorado, Cal.	
Home	80,000	2,000,000	G'ld Dirt Lode Gilp co., Col.	J. P. Davies, 81 John, N. Y.
Holman	150,000	300,000	Gilpin co., Col.	J. O'Neill, 24 Nassau, N. Y.
Humboldt	100,000	500,000	Colorado	78 B'way.
Idaho Gold	100,000		Montana	5 Pine, N. Y.
Isaac's Harbor	100,000	500,000	Isaac's Harbor, Nova Scotia	W. F. Shirley, 157 B'way, N. Y.
Isle Royale				44 Ex. Pl.
Kansas Colorado	100,000	1,000,000	Colorado	J. G. Greenlies, 111 B'way, N. Y.
Kent				G. H. Wyman, 19 Phe'x B'l'g, Bos.
Kip & Buell	100,000	200,000	Colorado	J. C. Harriott, 70 Wall, N. Y.
Knickerbocker	100,000	1,000,000	Colorado	F. Avery, 78 B'way, N. Y.
La Crosse	100,000	$1,000,000	Nevada Dist., Colorado	H. Fales, 71 B'way, N. Y.
Ludwig	200,000	$1,000,000	Colorado	
Lake Major	12,000	600,000	Nova Scotia	Fred. Franck, 113 Water, N. Y.
Mariposa Gold	100,000	10,000,000	Bear Valley, Cal.	G. W. Farlee, 34 Wall, N. Y.
Mammoth	50,000	500,000	Colorado	J. Jarrett, 41 Liberty, N. Y.
Manhattan	100,000	000,000	Colorado	W. R. Lothrop, 172 B'way, N. Y
Massachus. Its.	250,000	200,000	Gilpin co., Col.	W. D. Briggs, 11 Phe'x B'l'g, Bos
Merchants	30,000	600,000	Alturas co., Idaho	Jas. K. Selleck, 157 B'way, N. Y.
Metropolitan				
Mountain Pride	100,000	1,000,000	B'r C'k, St. Rec., Idaho	29 Pine, N. Y.
Montague	50,000	500,000	near Halifax, Nova Scotia	C. B. Cowling, 39 Kilby, Boston.
Mount Alpine			Griffith Dist., Clear C'k. Col.	J. B. Randol, N. Y.
Mount Vernon	500,000	5,000,000	Mt. V. & Mam'th Dist., Nev.	25 Park Row, N. Y.
Mount Vista	50,000	500,000		J. Chapman, 23 Nassau, N. Y.
Montana	100,000	400,000	Nevada, Ills., Greg'y, Col.	A. L. Guerber, 54 Wm., N. Y
Monte Christo	100,000	2,000,000	White Pine District, Nev.	Thos. Dunlap, 413 Chestnut, Phil
Montezuma	100,000	500,000	Colorado	F. B. Webster, Boston.
Montrose	100,000	1,000,000	Clear Creek co., Col.	C. A. W. Sibley, 80 B'way, N. Y.
Morning Star	5,000	5,000,000	Owyhee co., Idaho	E. M. Barnum, 137 B'way, N. Y.
Mexican Pacific	100,000	10,000,000	Mexico	J. Mackie, 88 Wall, N. Y.
Melones & Stan			Calaveras co	606 Mont, San Francisco.
National	300,000	3,000,000	on So. Boulder C'k, Col.	31 School, Boston.
Nevada Star				25 Pine, N. Y.
New England	50,000	150,000	Black Hawk, Col.	J. Weatherbee, Jr., Boston.
New Mexico			near SantaFe	
New Gregory				W. A. Kent, 144 State, Boston
New York City	50,000	5,000,000	G'd Canon D't, Land. co. Nev.	10 Pine, N. Y.
New York Dist.	50,000	500,000	Austin, N. Y. Dist., Nevada	71 B'way, N. Y.
New York of Col	00,000	1,000,000	Colorado	F. E. Roelfson, 74 B'way, N. Y
N. Y. & Nevada	100,000	1,000,000	Nevada	J. J. Osborn, 30 Pine, N. Y.
N. Y. G. Min'g.	100,000	1,000,000	Colorado	F. E. Roelofson, 78 & 80 B'way.
N. Y. & Eldor'do	250,000	2,500,000	Nevada	G. H. Munroe, 106 B'way, N. Y.
N. Y. & Idaho			Idaho	180 Chatham, N. Y.
N. Y. & Santa Fe			Nevada	New York.
N.Y. & Owyhee		1,000,000	Owyhee co., Idaho	6 Pine, N. Y.
N. Y. & Oro Fino	10,000	1,000,000	Owyhee co., Idaho	137 Broadway, N. Y.
N. Y. & Reese R			Nevada	New York.
N. Y. & Renfew				2 Murray, N. Y.
N. Y. & Washoe			Nevada	New York.
North Clear C'k	100,000	1,000,000	Gilpin co., Col.	J. Francis, 80 B'way, N. Y.
Nova Scotia				Chas. Barrett, 13 Doane, Boston
N. Y. & Nova Sc	100,000	1,000,000	Tangier, Nova Scotia	Jos. E. Gay, 3 Hanover, N. Y.
National S Min'g		1,500,000	Owyhee co, Idaho	115 B'way, N. Y.
Occidental	5,000	500,000	Nevada & Ills. C. Dist., Col.	100 B'way, N. Y.
Oldham				Chas. Barrett, 13 Doane, Boston
Ophir	62,500	625,000	on Comstock Lode, Nevada	Moses A. Hoppock, 45 William.
Pacific	40,000	4,000,000		24 Pine, N. Y.
People's	100,000	5,000,000	Alpine & Sierra cos	23 Nassau.
Peck				E. R. Sawyer, 144 State, Boston.
Perigo	60,000	3,000,000	Ind. Dist., Gilpin co., Col.	J. W. Stratton, 90 B'way, N. Y.
Pine Mountain	30,000	3,000,000	Pine Mountain Dist., Nev.	F. K. McCully, 157 B'way, N. Y.
Pioneer & Inskip			Buena Vista Dist., Nevada	15 Nassau, N. Y.
Phila. & Colo'do	20,000	1,000,000	Central City, Col.	E. W. Clark & Co., Phila.
Phelps & Gilm're	200,000	1,000,000	Colorado	W. H. Steudevant, 25 Nassau.
Pleasant Valley	125,000	1,250,000	Colorado	J. S. Lyon, 69 Wall, N. Y.
Pontiac	50,000	1,000,000	Ill. Cen. M Dist., Col.	R. H. Rickard, 19 Nassau.
Prescott	100,000	1,000,000	Central Arizona	69 B'way, N. Y.
Quaker City			Ind't D't. G'd D't City, Col.	103 South Third, Phila.
Quartz Hill	40,000	100,000	Nevada Dist., Col.	J. A. Tyler, 29 Wall, N. Y.
Rauche C'k	10,200	1,200,000	Pine Wood Dist., Nevada	18 Broad, N.Y.
Realito		1,600,000	G'd Hill D., Storey co., Nev.	117 B'way, N. Y.
Reese River Pr'l	100,000	1,000,000	AmadorDist., Lander Co., Nev	Elijah Alliger, 67 Wall, N. Y.
Renfrew				W. Stockbridge, 74 F'klin, Bos'n.
Republic	15,000	1,500,000	Amador D., Lander co., Nev.	67 Exchange Pl., N. Y.
Rocky Mountain	50,000	500,000	Grey & Empire Dists., Col.	E. L. Bolles, 70 B'way, N. Y.
Reciprocity	100,000	1,000,000	Canada East	B. B. Grant, Jr., 71 B'way, N. Y
Scorpion			Virginia City, Nevada	617 Clay, San Francisco.
Sherbrooke	100,000	1,000,000	Sherbrooke, Canada East	F. Schumacker, Cliff, N. Y
Silas Wright	60,000	600,000	Amador D., Lander co., Nev.	18 Wall, N. Y.
Silver State	100,000	500,000	Humb't Dist., Nevada, Humb't co., Nevada, Starr. Pr. R. D.	R. S. Miller, 49 William, N. Y
Silver Wave	300,000	3,000,000	Reese riv. Lander co., Nev.	Emmet Blair, 243 B'way, N. Y.
Smith & P'rmlee	125,000	2,500,000	Colorado	G. A. Lathrop, 4 Broad, N. Y.
Smithfield	100,000	400,000	Gilpin Co., Col.	A. F. Baum 48 Broad st., N. Y.
Spanish		3,000,000	La Plata, Churchill co., Nev.	228 South Third, Phila.
So. Clear C'k			Colorado	Canastota, N. Y.
Starlight Ledge	50,000	500,000	P'ville, El Dorado co.	
Star of Color	200,000	2,000,000	Colorado	J. N. Powers, 22 Pine, N. Y.
Standard	50,000	500,000	Gregory Dist., Col	T. A. Mitchell, 70 B'way, N. Y
Steptoe	20,000	2,000,000	G'd Can., Lander co., Nev.	10 Pine, N. Y.
Sterling City		1,200,000	Colorado	New York.
Stewart	100,000	500,000	Colorado	C. Durham, 31 Exchange, Boston
Suffolk				Carlos Cobb, 22 William, N. Y.
Southard				Wm. Wallace, 11 Doane, Boston.
Stanford				C. E. Jackson, 13 Central, Boston
Taschet	100,000	1,000,000	Colorado	F. J. Wright, 8 Wall, N. Y.
Texas	50,000	500,000	Black Hawk City, Colorado	Wm. E. Parish, 155 B'way, N. Y
Trimuto			San Antonio, L. Cal.	San Francisco.
Union	240,000	12,000,000	Colorado	F. A. Potts, 110 B'way
United States	75,000	1,500,000	Colorado	J. P. Stevens, N. Y.
University				31 Nassau, N. Y.
Virginia City	250,000	250,000	Nevada	J. B. William, 78 & 80 B'way,
Wauba Yuma	600,000	6,000,000	Arizona	35 William, N. Y.
Waddingham	48,000	1,200,000	Alturas co, Idaho	Jas. K. Selleck, 157 B'way, N.
Waverley				J. Leighton, 97 State, Boston
Windsor Gold M	10,000	100,000	Colorado	25 William, N. Y
Wilson & Cass			Colorado	New York.

LEAD.

COMPANY.	SHARES.	STOCK.	SITUATION OF MINE.	SECRETARY & PLACE OF BUSINESS.
Amenia	100,000	$ 500,000	Duchess co., N. Y.	G. Furman, 77 Cedar, N. Y.
Bucks County	10,000	200,000	Bucks co., Pa.	R. R. Sinclair, 53 Ex. Pl., N. Y.
Canada	40,000	250,000	Canada	Alb. Case, 7 Phe'x B'l'g, Boston.
Clute	150,000	550,000	Macomb T. St. Law. co., N. Y.	Rev'Ty S. Merrill 42 Cedar, N.Y.
Continental	200,000	500,000	Martinsburg, N. Y.	J. Sickles, 57 Ex. Pl., N. Y.
Eastport	100,000	1,000,000	Eastport, Me.	R. Vose, 54 William, N. Y.
Erie	40,000	4,000,000	Orange co., N. Y.	Ogden Gaul, 25 Pine, N. Y.
Hampton	130,000	500,000	Hampshire co., Mass.	C. W. Bryant, Boston.
Jefferson				65 Wall, N. Y.
King's Hill	0,000	50,000		W. L. Haskin, 180 B'way, N. Y.
Lake Superior	200,000	1,000,000	4 Secs. 5 & 36 T., 49 & 50 R., 4 28 & 29 Marquette co, Mich.	C. L. Mather, N. Y.
Lancaster	50,000	250,000	Lancaster co., Pa.	J. R. Sibley, 35 Pine, N. Y.
Macomb	10,000	550,000	Macomb T. St. Law. co., N. Y.	C. E. Scofield, 42 Cedar, N. Y
Maine	50,000	500,000	Eastport, Me.	A. L. Butler, 54 William, N. Y.
Mineral Point	100,000	500,000	St. Lawrence co., N. Y.	H. W. Warren, 60 City Ex., Bstn.
Morgan	100,000	500,000		W. Williams, 42 Cedar, N. Y.
Manhan				40 B'way, N. Y
Mount Hope	80,000	200,000	Mt. Hope, Orange co., N. Y.	W. Williams, 24 Pine, N. Y.
New Hampshire	100,000	500,000	New Hampshire	W. A. Farrar, 71 B'way, N. Y.
N. Y. & Boston		1,000,000	Chester co., Pa.	S. M. Cockein, 22 William, N. Y
Oswegatchie				24 Pine, N. Y.
Owens Lake	50,000	250,000		C. W. Bond, 78 Cedar, N. Y.
Phœnix	50,000	250,000	Columbia Co., N. Y.	G. W. Butler, 54 William, N. Y.
Placentia Bay	200,000	1,000,000	Newfoundland	J. Simpkins, 29 Wall, N. Y.
Ramsay	20,000	500,000	Township Ramsay, C. W.	C. W. Bryant, Boston.
Rochester	200,000	500,000		J. A. Ferguson, 8 Wall, N. Y
Rossie				24 Pine, N. Y.
Rosa Clara	100,000	1,000,000		H. Lathrop, 25 Nassau, N. Y.
St. Clair	100,000	1,000,000		H. B. Hawkins, 25 Nassau, N. Y
St. Joseph	100,000	1,000,000	St. Francis Co., Missouri.	Jas. R. Knapp, 6 Broad, N. Y.
Shawangunk	100,000	500,000	Mt. Hope, Orange co., N. Y.	E. P. Ackerman, 48 Pine, N. Y
Sussex	25,000	625,000	Sparta Town, Sus'x co., N. J.	F. H. Stow, 53 Cedar, N. Y.
Walkill			Orange co., N. Y.	W. A. Scott, 11 Wall, N. Y.
Warren			Warren, Gratton co., N. H.	J. S. Christie, 100 B'way, N Y
White Mountain			New Hampshire	111 B'way, N. Y.

SILVER.

COMPANY.	SHARES.	STOCKS.	LOCATION OF PROPERTY.	SEC'Y AND PLACE OF BUSINESS.
Amazon	25,000	$250,000	Nevada	W. L. Louther, 134 So. 3d, Phil.
Argentine	50,000	250,000	Argentine Dist., Colorado	D. L. Dennison, 134 State, Boston
Arizona	100,000	10,000,000	22 m W of Tubac, Arizona	J. B. Randol, 25 Nassau, N. Y
Astor	200,000	1,000,000	On Comstock Lode, Nev	J. Chapman, 71 Broadway, N. Y.
Atlantic & Pac.	50,000	1,000,000	Humboldt T. Hum't Co, Nev.	J. N. Sewall, 8 Broad st., N. Y.
Big Smoky	20,000	600,000	Smk'y Hill, Lander Co. Nev.	71 B'way
Black Eagle	7,000	350,000	Carson, Owyhee co., Idaho	O. D. Gardner, 40 Maiden lane.
Bullion	200,000	1,000,000	Bannock, Montana	55 Liberty street.
Bush	50,000	500,000	Austin City, Nevada	176 Chambers st., N. Y.
Combination	5,000,000	50,000	Nevada	J. W. Steute, Jr., 135 B'way, N.Y
Colorado Con			Cedar Hill Nevada	New York.
Columbia	50,000	5,000,000	Austin City, Nevada	J. E. Smith, 10 Pine street, N. Y.
Conn. & Nevada	120,000	1,250,000	Averill, Churchill Co. Nev.	49 Liberty street, N. Y.
Commonwealth	200,000	2,000,000	Gold Hill, Nevada	78 B'way, N. Y.
Cosmos	10,000		Owyhee Co, Idaho	157 Broadway, N. Y.
Del Norte & S'br			Lower California	New York.
Durango	5,000	500,000		W. R. Garrison, 73 W'm st., N Y.
East Bannack	100,000	500,000	Bannock City, Montana	J. Callender, 49 Ex. P., N. Y.
Empire G. & S.	100,000	10,000,000	Bodie Bluff, Mono	H. R. Gates, 191 Broad'y, N. Y.
Empire and Silver State	20,000	2,000,000	Reese River Dist. Nevada	57 B'way, New York.
El Dorado	500,000	2,500,000	San A 90 m S of Austin, Nev	208 South Fourth street, Phila.
Essex & Diadem	125,000	2,500,000	Sierra dis, Humboldt C. Nev.	A. R. Wetmore, 81 Vesey st. N.Y.
Franklin			Nevada	Philadelphia.
Gem	200,000	1,250,000		H. K. Gates, 191 B'way, N. Y.
Globe	100,000	500,000	Austin, Nevada	J. W. Brazier, 26 Pine, N. Y.
Good Hope	20,000	1,000,000	40 m S of Austin, Nevada	80 Broadway, N. Y.
Huron			Montana	New York.
Incas	300,000	300,000	Summit co., Colorado	J. P. Whitney, 19 Lindall, Bost.
Knickerb'r and Nevada	20,000	2,000,000	Union Dis. Nye Co, Nev	H. R. Shotwell, 70 Cedar, N. Y.
Lander Hill			Nevada	74 B'way. New York.
Lincoln		1,000,000	Owyhee Co, Idaho	80 Broadway, N. Y.
Lw'r California	40,000	2,000,000	North Part of Lower Cal.	55 William street, N. Y.
Madison	30,000	3,000,000	Nevada	W. W. Perkins, 71 B'way, N. Y.
Macedon			Nevada	Philadelphia.
Manhattan			Nevada	57 B'way, New York.
Merchants	20,000	600,000	Alturas Co. Idaho	157 Broadway, N. Y.
Metropolitan	15,000	1,500,000	Austin City, Nevada	158 Broadway, N. Y.
Morning Star	5,000	5,000,000	Owyhee County, Idaho	157 Broadway, N. Y.
Mount Vernon	500,000	5,000,000	Mount Vernon & Mammoth District, Nevada	New York.
Mount Vista	50,000	500,000		J. Chapman, 71 Bway, New York.
National	15,000	1,500,000	Owyhee Co. Idaho	115 Broadway, N. Y.
Nevada	100,000	500,000	Mountain Wells. D. Ch. co. Nev	323 Walnut street, Phila.
Nevada	20,000	1,250,000	Nevada	E. L. Bolles, 74 B'way, N. Y.
New Y'k & Ione	20,000	2,000,000	Ione City, Nye Co., Nev	74 Broadway, N. Y.
New York	1,500	1,500,000	Austin, Nevada	S. R. Hutchinson, 80 B'way, N.Y.
New York City	50,000	5,000,000	Gold Can Dist. Lander Co. N.	10 Pine street, New York.
New Y'k Dis'ct	50,000	5,000,000	80 m f'm Austin, N. Y. Dis. Nevada	S. A. Hopkins, 71 Broadway, N Y
New Y'k & Nev	10,000	1,000,000	Nevada	J. J. Osborn, 30 Pine street, N. Y
N. Y. & Owyhee		1,000,000	Owyhee Co. Idaho	6 Pine street, New York.
N Y. & Oro Fino	10,000	1,000,000	do. do.	157 Broadway, New York.
N. Y. and Silver Peak	20,000	2,000,000	Nye County, Nevada	R. C. Root, 74 Broadway, N. Y.
N Y. & Santa Fe			Nevada	New York.
N. Y. & Washoe			Nevada	New York.
North Am. M'g			Nevada	Philadelphia.
Ocean Transit		1,500,000	Lower California, Mexico	24 Pine, N. Y.
Ophir			On Comstock Lode, Nev	
Pah Ramgat Cl	50,000	5,000,000	Nevada	26 Pine, N. Y.
People's	100,000	500,000	Alpine & Sierra Counties	8 Pine street, New York.
Phœnix	200,000	2,000,000		48 East 26th street, New York.
Picacho	50,000	2,000,000	Arizona	T. H. Perkins, New York.
Pine Mount'n	50,000	5,000,000	Pine Mount'n Dist. Nev	F. K. McCulley. 100 B'dway. N. Y.
Pioneer & Buskip			Buena Vista Dis., Austin, Nev	15 Nassau street, New York.
Prescott		2,500,000	Arizona	T. H. Perkins, New York.
Presidential	125,000	2,500,000	Austin, Nevada	Wm. Lemmon, 17 Broad, N. Y.
Republic	15,000	1,500,000	Amador. D Lander Co. Nev.	67 Ex. Place, New York.
Revenue Exten	50,000	500,000	Lander County, Nevada	W. L. Kite, 142 South 4th, Phila.
Rosario & Carmo	5,244	1,480,000	Sinaloa, Mexico	San Francisco.
San Antonio	60,000	3,000,000	Arizona	C. Lamson, 21 Nassau st., N. Y.
Seminole	7,000	1,500,000	Unionv., Humboldt Co., Nev.	L. G. Wilkin, 119 B'way, N. Y.
Silas Wright	60,000	600,000	Amador. D Lander Co, Nev.	18 Wall street, New York.
Silver Hill	40,000	1,000,000	Nevada	J. C. Hitchcock. 62 B'dway, N.Y.
Silver Series		1,000,000	Lander Co., Nevada	W. B. Rogers, 117 B'way, N. Y.
South Boise, T Co	200,000	2,000,000	Alturas Co., Idaho	A. M. Palmer, 19 Broad st., N. Y
Star Hill	20,000	1,000,000	Nevada	155 B'way
St'la Gl'Crk			Colorado	Canastota, New York.
Stephenson		1,000,000	18 m E of Ft. Fillmore	A. S. Kellogg. 22 Pine, New York.
Steptoe	20,000	2,000,000	Gold Can. Lander Co. Nev	10 Pine. New York.
Sterling City		1,200,000		New York.
Tarshish	12,000	1,200,000	Toryabee Range. Un. D., Nev	H. S. M'Collum. 78 B'way, N Y
Tempest	200,000	1,000,000		L. Bangs, 17 Nassau, N. Y.
Trumbo			San Antonio, Lo'wr Cal	San Francisco.
Toiyabee	50,000	5,000,000	Pine W'd, Mn'tn Dis. Nev	J. M. Brown, 157 B'wy, N. Y
Union & El D'o	100,000	1,000,000	Mogul Silver Mn'tn	40 Park Row.
Upper Missouri		100,000	Montana	107 Broadway.
Vedder	21,000	2,100,000	Amador Dist, Nevada	L. G. Bingham, 80 B'way, N.Y.
Wamba Yuma	600,000	6,000,000	Arizona	35 William street, New York.
War Eagle	50,000	200,000	Owyhee Co., Idaho	G. M. Eldridge, 144 S. 4th, Pl
Washington	22,500	2,250,000	Austin, Nevada	S. R. Hutchinson, 80 B'way, N.Y
White Mountain			New Hampshire	111 Broadway, New York.

COPPER.

COMPANY.	SHARES.	CAPITAL.	SITUATION OF PROPERTY	SEC'Y., AND PLACE OF BUSINESS.
Astor,	20,000	500,000	Michigan,	Pittsburgh.
Adventure,	20,000	1,000,000	Parts of Sections 3o, 36. T. 51, N Range 38 W,	W. H. Smith, 51 Ex. Pl, N. Y.
Etna,	20,000	500,000	1226 A in Secs. 6, 7, 18, T. 58, N P 28, W Keweenaw co. Mich.	B. A. Hoopes, 324 Walnut St., Phil.
Alb'ny & Best'n,	20,000	1,000,000	Secs. 7, 8, 9, 10, 11, T. 55, R. 33	Fred. Beck, 43 City Ex., Boston.
Anita,	20,000	500,000	Del Norte co., California,	8 Wall St., N. Y.
Algomah,	20,000	500,000	W½ S. 30. T. 51, R. 37,	L. W. Clark, Boston.
Allouez,	20,000	500,000	Town 57, R. 32, Sec. 31,	Horatio Bigelow, Boston.
Amy gil'yd'l,	20,000	500,000	E½ Secs. 16, 21, T. 58, R. 20, NW¼ Sec. 5, T. 57, R. 31. 160 A.	F. H. Womrath, 324 Walnut St., Philadelphia.
Arcadian,	20,000	500,000	NW¼ Sec. 20, T. 57, R. 33, 160 A,	C. P. Dixon, 48 Pine St. N. Y.
Atlas,	20,000	500,000	NE¼ of E½ & NW¼ of NW¼ Sec. 31, T. 57, R. 31,	L. W. Clark, Boston.
Aztec,	20,000	500,000	W½ Sec. 31, T. 51, N. of R. 37,	L. W. Clark, Boston.
Bay State,	20,000	500,000	SW¼ Sec. 29, T. 58, R. 31,	L. W. Clark, Boston.
Bohemian,	20,000	500,000	E½ Sec. 31, NW¼ Sec. 32, T. 51, R. 37, W,	R. H. Rickard, 21 Nassau St., N. Y.
Boston,	20,000	500,000	Michigan,	H. W. Warren, 60 City Ex., B'st'n.
Canada,	20,000	500,000	Brome co., Canada East,	H. P. Mount, 3 Hanover St., N. Y.
Calumet,	20,000	500,000	Michigan,	Boston.
Concord,	20,000	500,000	Michigan,	Boston.
Carp Lake, M.,	20,000	500,000	T. 51, N. R. 43, W, S½ of N½ of N. Sec. 14, and E½ Sec. 23, and NE¼ Sec. 25, 440 A.	W. H. Aled, 70 Wall St., N. Y.
Cascade, M.	20,000	500,000	SW¼ Sec. 9, T. 49, N. R. 39, W., in Ontonagon co., Mich.,	G. F. Riley, 35 Wall St., N. Y.
Copper Creek,	1,000	$100,000	Missouri,	H. M. Thompson, Missouri, Mo.
Copper Falls,	20,000	500,000	Sec. 14, T. 58, N. R. 31, W, Keewenah Point,	97 State, Boston.
Copper Harbor,	20,000	500,000	S½ Sec. 10, T. 58, R. 28, 320 A, Keewenah co.,	Fred. Beck, 43 City Ex., Boston.
Copper Creek,	20,000	500,000	Douglas co., Wisconsin,	T. B. Lawson, 71 Broadway, N. Y.
Central,	20,000	500,000	E½ Sec. 23, T. 58, N. R. 31, W, Strafford, Orange co., Vt.,	J. Stanton, Jr., 25 Nassau, N. Y.
Cornwall,				D. H. Whitney, 17 State St., B'n.
Continental,	200,000	500,000	Martinsburg, New York,	J. Sickles, 50 Ex. Pl., N. Y.
Corinth,	20,000	500,000	Corinth, Orange co., Vermont,	W. A. Cleveland, 191 B'way, N.Y.
Copper Hill,			Wisconsin,	Boston.
Dacotah,	20,000	500,000	Sec. 35, T. 55, R. 34, Portage Lake,	J. M. Cooper, Milk St., Boston.
Delaware,	20,000	500,000		S. M. May, 326 Walnut St., B'st'n
Dorchester,	20,000	500,000	Michigan,	31 and 32 City Ex., Boston.
Douglas,	20,000	500,000	E½ Sec. 30, T. 55, R. 3,	S. J. Edwards, William st., N. Y.
Dudley,				H. Bigelow 43, City Ex., Boston.
Eagle River,	20,000	500,000	T. 58, R. 31, Secs. 28, 29, 33, 34,	A. Lamson, 70 State St., Boston.
Ely,	20,000	500,000	325 A., Richmond, Canada East,	Ernest Sarchi, 82 B'way, N. Y.
Empire,	20,000	500,000	1798 A., Secs. 1, 2, 11, 12, T. 58, N. K. 28, W. K'w'n co., Min.	J. S. McMullin, 423 Walnut, Phil.
Eureka,	20,000	500,000	W½ Sec. 2, T. 49, N. R. 41, W. Ontonagon co.,	H. Shirley, 157 B'way, N. Y.
Evergreen Bluff,	20,000	500,000	NE¼ Sec. 6, T. 50, R. 38,	F. W. Capen, 44 Ex. Pl., N. Y.
Edwards'Copper	20,000	500,000	Michigan,	H. K. Thomas, 12 Wall, N. Y.
Eagle Harbor,	20,000	500,000	Michigan,	51 Ex. Place, New York.
Erie,	20,000	500,000	Michigan,	A. S. Kellogg, 22 Pine st., N. Y.
Flint Steel R.,	20,000	500,000	Sec. 11, 12, T. 50, N. R. 39, W.	F. K. McCully, 157 B'way, N.Y.
Forest City,	20,000	500,000	320 A. NE¼ Sec. 36, and SE¼ Sec. 25, T. 51, R. 43,	J. F. Paul, 19 Phœnix Building, Boston.
Franklin,	20,000	500,000	¼ Sec. 24, T. 55, N. R. 31 W.,	C. Emery, 26 Kilby St., Boston.
Franconia,	60,000	300,000	New Hampshire,	J. Hanna, 162 Fulton St., N. Y.
French Creek,	60,000	600,000	Chester co., Pennsylvania,	R. Roberts, 19 Nassau St., N. Y.
Garden City,	20,000	500,000	SW¼ Sec. 69, N. W. Sec. 19, T. 58, N. R. 31 W.	R. H. Howe, Chicago.
Girard,	20,000	500,000	600 A. Sec. 15, T. 58, N. R. 25, W. Keweenaw co., Mich.,	B. A. Hoopes, 324 Walnut, Phil.
Gr'd Portage,	20,000	500,000	SW¼ Sec. 36, R. 34, W,	A. S. Kellogg, 22 Pine St., N. Y.
Great Western,	20,000	500,000	SE¼ Sec. 30, & SW¼ Sec. 29, T. 21, K. 320 A., Ontonagon	J. M. Cooper, 24 City Ex., B'st'n.
Hamilton,	20,000	500,000	SE¼ Sec. 35, S½ Sec. 36, T. 50, R. 41, SW¼ Sec. 21, R. 20, 14½ A.,	J. B. Townsend, 44 Exchange, N. Y.
Hancock,	20,000	500,000	SW¼ Sec. 26, Tract of Sec. 25, T. 5, R. 34, W.,	Fred. Beck, 43 City Ex., Boston.
Hanover,	20,000	500,000	Michigan,	do. do. do. do.
Hartford,	20,000	500,000	320 A. E½ & SE¼ Sec. 32, SW¼ & W½ Sec. 33, T. 50, R. 40, W,	T. M. Tyng, 61 Cedar St., Boston.
Heawood,			Michigan,	57 Broadway, N. Y.
Hope,	20,000	500,000	240 acres in T 57, R 32, Kw co.	19 Nassau St., New York.
Humboldt,	20,000	500,000	Sec. 21, T. 58, R. 31, W,	Hor. Bigelow, 43 City Ex., B'st'n.
Huron,	20,000	500,000	Sec. 2, T. 54, R. 34, W,	Hor. Bigelow, 43 City Ex., B'st'n.
Hilton,	20,000	500,000	Michigan,	W. H. Smith, 51 Ex. Place, N. Y.
Indiana Copper,	20,000	500,000	Michigan,	25 Nassau st.
Isle Royale,	20,000	1,000,000	NW¼ Sec. 1, T. 54, R. 34, W,	F. W. Chapen, 33 Ex. Pl., Boston.
Keweenaw,	20,000	500,000	Michigan,	F. W. Chapen, 44 Ex. Pl., Boston.
Knowlton,	20,000	500,000	SE¼ Sec. 1, W½ of SW¼ Sec. 1, and other lands,	44 Ex. Pl., N. Y.
Lafayette,	20,000	500,000	Secs. 25, 30, 36, T, T. 51, N. R. 43, and 44, W, Ontonagon,	P. C. Blancan, 35 Wall St., N. Y.
Lyster,	200,000	$400,000	Township Nelson, Canada East,	H. W. Nelson, 24 City Ex., B'st'n
Lower California	40,000	2,000,000	N. part of Lower California,	55 William St., N. Y.
Madison,	20,000	500,000	Part sec. 18, 19 entire. 30. 31.	Fred. Beck, 43 City Ex., B'st'n.
Merryweather,	20,000	500,000	Secs. 9, 10, T. 48, N. R. 4, W,	J. T. Waters, New York.
Mandan,	20,000	500,000	680 A. Secs. 8, 17, 19, 30, T. 58, N. R. 29, W., Keweenaw co., Min.	B. A. Hoopes, 324 Walnut, Phil
Manhattan,	20,000	500,000	W½ Sec. 11, NW¼ Sec. 14, T. 58, N. R. 32, W, 360 A.	J. W. Davies, 21 Nassau St., N Y.
Mendotta,	100,000	500,000		M. Taylor, 30 Wall St., N. Y.
Mass. M. Co.,	20,000	500,000	SW¼ Sec. 7, T. 50, N.R. 38, W,	J. M. Cooper, Pittsburgh.
Mesnard,	20,000	500,000	NE¼ Sec. 24, T. 55, R. 34, Calaveras co.,	L. Burr, 12 Phœnix B'gs, Boston, 606 Mont St., San Francisco
Melones & Stan.,				
Minnesota,	20,000	1,000,000	Sec. 15, T. 50, N. R. 39, W,	S. M. Pond, 12 Pine St., N. Y.
Maryland,			Maryland,	Baltimore.
Medora,	20,000	250,000	Michigan,	Pittsburgh.
Michigan,	20,000	300,000	Michigan,	W. H. Smith, 51 Ex. Place, N.Y.
Merrimac,	20,000	500,000	NW¼ Sec. 34, T. 51, R. 38, W, Ontonagon,	J. M. Mills, 284 Pearl St., N. Y
National,	20,000	300,000	Sec. 16. T. 50. R. 39. W. 1.988 A.	J. M. Cooper, Pittsburgh.
Nequakett,	20,000	500,000	Sec. 26. T. 51. R. 43,	
New Burra,			Baltimore,	R. Robarts, 19 Nassau St., N. Y.
New Jersey Con.	100,000	1,000,000	New Jersey,	W. Bowes, 68 Wall St., N. Y.
N. Y. & Passaic,	100,000		Harrison, Bergen c.,	T. H. Belt, Jr. 23 William St. N Y
New Devon,				T. H. Belt, Jo, do. do.
North Western,	20,000	300,000	W½ Secs. 24, 25, 26, E½ Secs. 36, 35, T. 58, N R. 31.	17 William St., N. Y. J. M. Cooper, Boston and Detroit.
North Cliff,	20,000	200,000	Michigan,	Pittsburgh,
Norwich,	20,000	500,000	Secs. 11, 12, T. 40, N R. 39, W. and other lands, 1,500 A.,	P. C. Blancan, 35 Wall St., N. Y.
Ogima,	20,000	500,000	NW¼ Sec. 6, T. 50, N.R. 33, W.	G. E. Leffingwell, 7 Pine, N. Y.
Ontonagon,	20,000	500,000	631 A. Secs. 20, 21, 28, T. 50, N. R. 39, W. Rockland,	G. Hart. 11 Pine Street. N. Y.
Otisville,	100,000	500,000	Otisville, Orange co., N. Y.,	C. Windsor, 69 Wall St., N. Y.
Penn. Manuf'g.,	20,000	1,000,000	4,320 A. Secs. 13, 14, 15, 24	
Petherick,	20,000	500,000	Michigan,	Boston,
Phenix,	20,000	500,000	Michigan, ½ Secs. 10, 11, 12, 23, 25, T. 58, N. R. 30, W.	Boston, S. M. May, 326 Walnut St., Phil.
Pewabic,	20,000	500,000	W½ Sec. 25, T. 55, N R. 34, W.	C. Emery, 39 State, Boston.
Pitts. & Boston,	20,000	150,000	Ts. 58, 57, N. R. 31, 32, W. 1245 A.	H. A. Johnston, Pittsburgh.
Pontiac,	20,000	500,000	SE¼ Sec. 13, T. 55, N. R. 31, W.	C. Emery, Kilby St., Boston.
Prescott,	100,000	1,000,000	Central Arizona,	69 Broadway, N. Y.
Providence,	20,000	500,000	240 A. in Keweenah co., NW½ Sec. 10, W½ NW¼ Sec. 10, T. 57, R. 32, W.	J. W. Davis, 21 Nassau St., N. Y.
Phila. & Boston,	20,000	500,000	640 A. Sec. 14. T. 58, N. R. 28, W. Keweenaw co., Mich.	J. S. McMullin, 423 Walnut St., Boston.
Quincy,	20,000	500,000	Sec. 26, T. 54, N. R. 34, W,	W. H. Smith, 51 Ex. Pl., N. Y.
Republic,	8,000	200,000		H. Baldwin, 70 Wall St., N. Y.
Reliance,	20,000	500,000	Secs. 21, 22, 27, T. 58, N. R. 28, W, 19,785 A.	H. K. Thomas, 11 Wall St., N. Y
Rochester,	200,000	500,000		J. A. Ferguson, 8 Wall St., N. Y
Rhode Island,	20,000	500,000	Michigan,	New York.
Ridge,	20,000	500,000	Sec. 35, T. 51, R. 38, W,	51 Exchange Place, N. Y.
Rockland,	20,000	500,000	Sec. 11, T. 50, R. 39,	S. J. W. Barry, 71 B'way, N Y.
Resolute,	20,000	500,000	1120 A. Secs. 7, 18, 19, T. 58, N. R. 29, W. Keweenaw co., Mich.,	
St. Mary,	20,000	500,000		F. Beck, 45 City Ex., Boston.
St. Margaret,	200,000	1,000,000	Canada,	E. B. Sutton, 43 Pine, N.Y.
Saint Clair,	20,000	500,000	Michigan,	Boston,
Sharon,	20,000	500,000	Ontonagon co., Mich.,	P. C. Blancan, 35 Wall St., N. Y.
Sheldon & Col.,	20,000	500,000	SE¼ Sec. 36, T. 55, R. 34, W, SE½ Sec. 34, T. 55, R. 34, W,	S. J. Edwards, 22 W'm. St., N. Y H. W. Nelson, Boston.
South Side,			T. 53, 59, N. R. 28, 30 W,	Copper Harbor.
Societe Fran'se,	10,000			
Superior,	20,000	500,000	W¼ Sec. 14. T. 50. N.R. 39, W.	S. J. W. Barry, 12 Pine St., N. Y
Toltec Consol.,	20,000	500,000	Secs. 25, 26, R. 50, R. 36, Wisconsin,	H. W. Nelson, Boston. 17 William St., N. Y.
Ural,				
Vulcan,	20,000	500,000	1120 A. Secs. 7, 17, 18. T. 58. N R. 27. W. Keweenaw co.,	F. K. Womrath, 324 Walnut, Phil.
Victoria,	20,000	500,000	Secs. 20, 29, 30, 34, 34. T. 50, R. 39, and other lands,	L. W. Clarke, Boston.
W. Minnesota,	20,000	500,000	Secs. 17, 18, 19, T. 50, N. R. 39, W.	C. T. Howard, Boston.
Wickopee,	100,000	500,000	Massachusetts.	G. A. Sneden, 12 PineSt., N. Y
Vermont,	100,000	500,000	W. Fairlee, Orange co., Vt.,	191 B'way, N. Y.
Wauka Yuma,	600,000	6,000,000	Arizona,	35 William St., N. Y
Winthrop,	20,000	500,000	Michigan,	Boston

S, means section; T, towns'p, R range.

AMERICAN
Journal of Mining.

[ILLUSTRATED.]

GEORGE FRANCIS DAWSON,
EDITOR

By publishing contributions, the JOURNAL OF MINING *does not necessarily endorse the positions assumed by contributors.*

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NEW YORK, SATURDAY, NOVEMBER 10.

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NEW YORK THE "HOTBED OF MINING SWINDLES"—WHAT ELSE?—HOW ABOUT OTHER CITIES?

New York city is often accused of being the hotbed, *par excellence*, of mining and other corruption, upon this continent, but we doubt whether it is any more corrupt in proportion to its size than certain other large cities so loudly praised for virtue by those who live therein. The great wealth of this city makes it the focal point to which those who have mining properties are most likely to converge. It is a sort of maelstrom into which the mine-owner of limited means—the man with the elephant—is almost irresistibly drawn by the seductive influence of capital—a whirlpool, by which, in many cases out of ten, he is "sucked in." Plenty of good mines come here for sale, and plenty of bad ones, also. Sometimes a bad broker or "middle man" swindles the owner of a good mine; sometimes the owner of a bad mine swindles a good broker; sometimes they both swindle the public; and sometime the public fools them. It is about the same in all commercial centres—we know of none that is righteous, no, not one. Nor is this simply confined to mining affairs; other businesses are fully as bad, often worse, and it is a sad thing to reflect that New York, while it can perhaps boast of more commercial activity and wealth; more learned and conscientious clergymen, lawyers, and doctors; more eloquent orators and poets; more hard-fisted mechanics, and honest laborers; more streets and houses, and schools, and newspapers, and population; is also unhappily afflicted with more quack doctors, false teachers, "shysters," literary humbugs, mining swindlers, general rascality, thieving, poverty, rags and filth, than any other city in the Union. "Every bitter" it is said "hath its sweet, and every sweet its bitter." So, while this great city preponderates in goodness and in works of piety and charity—witness her donations to the Sanitary Fund during the late rebellion, to the sufferers by fire in burned cities, and the recent spontaneous and unparalleled subscription for church purposes at the Cooper Institute during the celebration of the Centennial Anniversary of Methodism—it is not to be wondered at that she also probably stands unequalled among American cities in folly, wickedness, and crime. The wisdom of the Almighty has so adjusted things that they shall conform to the doctrine of compensating circumstances. Show us disease and we will show you doctors and nostrums in abundance near at hand to meet it; show us pleasure and we will show you corresponding pain following close on its heels. The Earth is made up of hills and vales; Time is divided into day and night; Life consists of sunlight and shadow. Man lives and dies, his place is filled by another. The waste and exhaustion of lands must be made up by artificial means or by long inaction. The average intellect and mental cultivation of the world has for ages been about the same. What we are conceited enough to call the "progress of the world," is really the progress of a very small portion of it, and a glance elsewhere will show a corresponding ratio of retrogression. Ages ago, the East was the seat of learning, and opulence, and refinement, where the sciences and arts flourished, while the West was comparatively ignorant, poor, coarse, and barbarous; the relation is simply changed. The West has pressed forward, the East has fallen backward, but has the *whole* world become any wiser or better? The very ground we stand on is sinking in one part of the world, and rising in the other. That which is taken from us is returned to us again either in its own or some other form. The earth and all within and upon it, is ever shifting and changing, yet there is always the same amount of material there, good, bad, and indifferent. Philadelphia, Boston, Chicago, Baltimore, San Francisco, and other cities when they equal New York in wealth and population, will also equal it in goodness and depravity.

THE COAL QUESTION—"BIG CRY AND LITTLE WOOL."

The usual Fall howling against the Coal Trade was commenced last week by the *Mercantile Journal* and *Herald*, and doubtless Tray, Blanche, Sweetheart, and all the other little dogs will soon be heard barking in their train. Twice a year, regularly as Spring and Fall are upon us, the same dismal brain-splitting yelping, is heard from nearly all the big and little dogs of the New York press, and the burden of their cry is: "Heartless Coaldealers!" "Hard-hearted Extortionists!" "Cruel Exactions!" "Monstrous Monopolists!" "Outrageous Swindlers!" Why the Coal Trade should be thus periodically singled out, is a mystery to us. The traffic in Flour is all honest and honorable; the Dry Goods Trade is fair and just; and butter at 65 cts. per lb. is not to be grumbled at; but coal at $7.25 per ton is "an outrage," "a swindle," "a monopoly." In their efforts to make out a case against the coal dealers, some of our contemporaries have to go back as much as a year, and rake up old grievances in order to influence the public mind. Thus the *Mercantile Journal* says:

A twelvemonth ago, upon actual calculation, a long ton of 2,240 lbs. of anthracite stove or egg coal, might be traced from the Pennsylvania mines to the yards of dealers in this city about as follows:

Worth in the mine	$0 25
Out of the mine	1 05
Prepared for use	1 85
In Philadelphia	8 25
At Elizabethport, N. J.	9 50
At the New York Dock	10 25
At the Retail Yards	13 95

What a monstrous and unreasonable increase of price!

Now, assuming this statement to be correct, what on earth can the grievance of a year ago have to do with to day? There is no relation at all between the prices of then and now. If the above authority be correct, the retail price of coal was *then* a trifle under $14 per ton, while *now* it is a trifle over $7—just about *half what it was a year ago*—and yet we hear this grumbling, in which the *Herald* generally leads off. There is a reason for this, and one reason is that Mr. James Gordon Bennett has many presses to run, and rooms to warm up, necessitating the purchase of hundreds of tons of coal during the year, so that it is quite an object with him if he can reduce the price of coal. Another reason is that the coal dealers *do not advertise* in his columns, nor in those of most of his contemporaries; hence by attacking the Coal Trade there is something to be gained, and nothing to be lost, except principle—an article with which, we are pained to say, many of our contemporaries are not overburdened. Compare the prices of necessaries now with those prevailing before the late civil war, and it will be observed that the percentage of increase is less in the case of coal than in any other leading article. Before the war, flour could be had for $8½ @ $9 per bbl., now it is $13 @ 15½; meats ranged from 14 to 20 cts. per. lb., now they cost 20 to 35 cts.; clothing has been doubled, groceries and house-rents have more than doubled; dry goods have trebled, yet coal—that badly abused article, the dealers in which are accused of nearly all the crimes in the Decalogue—*was* $5 *per ton before the war and is only* $7.25 *now*. Our contemporaries talk of monopoly in coal!—why there is no such thing, If there is, either the wholesale dealers or the retail dealers must be the guilty parties. The latter are continually underselling one another, and thus keeping down the price of the commodity—proof positive that there is no "combination" there; while the wholesalers having no extensive yards, always sell their cargoes as soon as possible after arrival, because every day's delay subjects them to so much additional expense for demurrage. So it is plain enough that as the Coal Trade is at present conducted, there can be no such thing in it as "monopoly." But the present price of coal is the strongest argument—and here for the present we shall leave the subject.

Yale College and its Collections; Geological, Mineralogical and Otherwise.

We recently alluded to Mr. Peabody's munificent gift of "$150,000 in trust for the *foundation* and maintenance of a Museum of Natural History (especially of zoology, geology and mineralogy) in connection with Yale College," using as we do now, the language of the instrument of gift. A friend has since informed us that many of our readers would be likely to suppose from this that Yale possessed no collection at the time this donation was made—a meaning we were far from intending to convey. On the contrary, that venerable abode of learning can boast of extensive geological and mineralogical collections, besides large collections in the special departments of mining and metallurgy.

Professors Brush, Silliman and Brewer have for years been gathering specimens from different parts of the United States, for the cabinets of Yale. European vein-stones, ores and furnace products are also well represented there—and judging from what we have heard we should suppose it to be already one of the most elaborate and thorough museums in the country. Mr. P.'s donation, however, will enable it to become one of the best in the world.

The Manufacture of Alkali.

The manufacture of alkali in Great Britain is attended with one unwelcome circumstance, the outpouring of hydro-chloric acid, causing a blight on all vegetable matter upon which it descends, and which has in effect changed many beautiful districts in the immediate vicinity of the works into black and barren wastes. In consequence an Inspector was appointed under the Alkali Act of 1863, and from his report we learn the immense increase of the trade within the past few years. There are now consumed in this manufacture 315,000 tons of salt every year—much more than the entire produce of salt in our own country—and the reason of this is, that in England salt costs one dollar, and in this country fifteen dollars per ton. Although our natural salt resources are far more extensive than those of England, instead of manufacturing salt and soda we have them manufactured in England and brought to us 2000 miles over the sea.

A Good Appointment.

We learn that Professor Henry Dussauce whose esteemed contributions to the JOURNAL OF MINING have made him well known to our readers, has just received from the President an appointment as Commissioner to the French Exposition to be held in 1867. The Professor's knowledge of French, coupled with his undoubted scientific knowledge, renders him a very desirable addition to the U. S. Commission.

Our Western Gold Mines Giving Out.

By overland telegram, we learn that the amount of gold coined at the San Francisco Branch Mint, during the month of October, was $2,312,000.

Scientific Meetings.

AMERICAN INSTITUTE—POLYTECHNIC BRANCH.

THE AVERY ENGINE—ILLUMINATION—GAS ORGAN—MILLER'S "AMERICAN STEAM BOILER"—DR. HIRSH VS. DR. VAN DER WEDE.

At the meeting of the Polytechnic Branch of the American Institute on Thursday evening, Dr. Tillman exhibited a very primitive looking machine, the "Avery engine." It is straight, in shape like a double paddle, hollow, and revolving on a point at the junction of the two arms, here steam enters into each paddle and discharges itself at each extremity from a hole $\frac{1}{6}$ of an inch diameter at opposite edges of each blade. Dr. Tillman explained that the reason why it revolved is that the steam bears a pressure on the one edge, but on the other edge, the pressure is relieved by the escape from the hole, and that the engine had formerly been much used in circular saw mills, where there was abundance of fuel, and consequently waste of steam was of little importance. Others of the audience thought that it acted by direct propulsion of the escaping steam against the outward air.

Dr. Van Der Wede continued his illustrations on illumination. He showed again how light decreases and heat increases in the flame as additional air is combined with illuminating gas; and made to sound more clearly than before at the previous meeting a noise produced by the falling of a flame which had been lighted at the top of a tube. This noise is produced at a certain point in the tube and by inserting a wire gauze can be detained there, and as the sound becomes very loud may be useful as a burglar alarm. The Dr., by using different sized tubes, constructed a kind of organ, which, however, he found it impossible to tune accurately.

Mr. Miller exhibited plans of his new steam boiler. It is based on the theory that the greater the evaporating surface the greater is the steam produced. He therefore introduces his fire-box into the boiler and lines the sides with vertical tubes meeting in an arch above the fire box, and there, as well as at the bottom, the water contained in them is connected with the water in the boiler.

He states that the greater part of the steam in a boiler is produced over the fire, and that this part of his boiler contains three times the evaporating surface of ordinary boilers; the water being in circulation prevents to a great extent the formation of scale, the deposition of which, also, on the bottom of the tubes, he prevents by a simple contrivance. Also, the steam is got up much quicker than usual, and the steam escaping quickly to the top of the boiler, by means of the vertical tubes, is less mixed with water, and prevents in great measure danger from scalding if the boiler explodes. Dr. Hirsh, in contradiction to statements made by Dr. Van der Wede, treated common petroleum with sulphuric acid producing what he stated was an oxidation of the petroleum, shown by the black color and the deposition of a black carbonaceous substance, he then by washing it with common water, produced a white color. He denied, also, that the products of petroleum were wasted; the refuse is allowed to settle in a tank, whence the top oil is restored to the crude petroleum tank, and the acid sold to the manure makers at $1 per carboy. This interesting discussion was to be continued at the next meeting.

GERMAN POLYTECHNIC ASSOCIATION.

DISCUSSION ON THE ACTION OF HEAT ON STEAM BOILERS.

At the meeting of the German Polytechnic Association, Oct. 26th, Mr. Rochorr in the chair, Mr. Kinkel said that he desired to know whether or not the products of steam boiler combustion, after they leave the tubes, can be brought into direct contact with the crown-sheets of the boiler? Mr. Rochorr replied that it could safely be done, and is done in the cases of some marine boilers. Mr. Burchardt thought that said products should be kept in contact with such parts of the boiler as are covered with water. For stationary boilers, he considered this would be the best mode of utilizing the heat. Dr. Hirsh mentioned that plates exposed to strong heat rapidly wear out, and this would increase the likelihood of boiler explosions—*vide* Wiard's experiments. Mr. Rochorr suggested that this objection could be met by using thicker boiler plates where exposed to strong heat—particularly at the water-level and a few feet above it. Mr. Kinkel stated that he laid bricks on the boiler in such manner as to prevent the direct contact of the products of combustion with its crown sheets.

Correspondence.

[To insure insertion of Correspondence in our columns the full name and address of the writer must be given.]

The Sodium Amalgam Controversy.*—Prof. Wurtz Defends his Process against Mr. Kustel's Attacks.

EDITOR JOURNAL OF MINING:

SIR—I note in the San Francisco *Scientific Press* of Oct. 6, some exception taken by Mr. G. Kustel to portions of my communication to the American Association at Buffalo. On referring back to the previous number of that Journal, I find that the substantial part of my Buffalo paper was not before Mr. K.; the article copied consisting of but a few of the concluding paragraphs, the "fag end," so to speak, of my paper, all the substantial part having been most perversely and unaccountably omitted by the New York *Tribune*, the journal whence the *Press* took it.†

It appears that although Kustel has before admitted, and now again repeats, that the use of sodium-amalgam is beneficial in gold-amalgamation, which can only be understood as a concession of all I claim, namely, that sodium exalts the adhesion between quicksilver and the precious metals, and prevents the flowing of amalgams of the latter, he still strangely insists that it can act only by decomposing silver ores chemically, according to its long known and familiar power of removing most of the metalloids from their argentic compounds. I must reiterate what I supposed I had clearly enough expressed in my specifications published months since, that I do not contemplate interfering with the reducing agents, (iron, etc.,) now in use; but that my discovery consists in greatly accelerating and intensifying their action by adding a minute quality of sodium.

I recommend to Mr. K., and to other practical metallurgists (all of course familiar with the tardy and tedious action of iron on moist chloride of silver) to bray together in a mortar some iron filings, quicksilver and precipitated chloride of silver, adding meanwhile a small quantity of sodium amalgam, the sodium in which, however, may be but a small fraction of that equivalent to the chloride, the almost instantaneous result will be a mass of pasty or nearly solid silver amalgam.

If such phenomena as this are to be ignored or pooh-poohed, as signifying nothing and having no bearing on the working of silver ores, I have but to submit respectfully that this seems like carrying an assumption of practicability (?), and an affectation of contempt for science considerably beyond the limits of common sense.

The above little experiment will serve for the present to exemplify and illustrate the mode in which the exalted adhesion and more intimate contact produced by sodium enhances and quickens voltaic and chemical reactions between metallic substances. This is the first and greatest of the discoveries upon which my new methods are based; and the second depends simply upon the correlated principle that metallic cohesion as well as adhesion, that is, attraction between homogeneous as well as heterogeneous surfaces, is at the same time exalted by sodium, whence it arises that floured and pasty precious amalgams which incorporate together with difficulty and usually only on application of mechanical force, coalesce spontaneously and with avidity when quicksilver containing a minute quantity of sodium, (or, as I have been somewhat ridiculed by Mr. K. for expressing it, in the "magnetic" condition,) has been added thereto. It is on this ground that I have recommended the use of sodium in separating and collecting diffused silver-amalgam from a slime or pulp. Mr. Kustel's brief comment on this, that "this may be so," seems hard to reconcile with his belief expressed in another paragraph that sodium must "cause a greater loss of quicksilver by rendering the latter liable to be ground to flour." I most fully agree with him that "silver amalgam is not silver ore," though unable to see clearly the bearing of the observation.

Mr. Kustel adheres also to his preconceived idea that *iron pans* will have to be eschewed in all operations with sodium-amalgam; his reason, as I understand it, being the "local" voltaic action which may set in upon mutual contact of iron, sodium-amalgam and water, which, theoretically, should soon remove all the sodium. I have nevertheless before pointed out, as the result of my own experiments, that when the iron becomes enfilmed by the amalgam, this "local action," as in the case of zinc of an ordinary voltaic couple, is greatly retarded. With some kinds of iron it becomes almost *nil*. I wish now, however, to show conclusively that this objection is a "bugbear." A moment's thought will show any one skilled in the art that the mullers of the pan should keep the quicksilver so diffused in globules throughout the slime that no contact of consequence with the iron can occur. When such diffusion does not take place, it merely argues imperfect manipulation. The most that can be made of this objection of Mr. K., is the suggestion that the mullers be of *stone*, or some material other than iron. My own results, though, are to the effect that the amount of sodium necessary to produce a very marked benefit, fall much below that which is requisite to engender the voltaic action upon surfaces of *cast-iron*, which Mr. K. deems so very objectionable.

I have to complain of Mr. Kustel's apparent insinuation that I have fallen into the common method of "putting the cart before the horse," by trying to force the results of experiment into accordance with a preconceived "idea." I claim that the ideas I have promulgated are solidly founded upon experiment; and still maintain that Mr. K.'s assumptions that sodium may only be used on silver ores as a *decomposing* agent, and that therefore it is necessary also to go to the extreme of decomposing the ores of the baser metals, thus contaminating and flouring the quicksilver; and his other assumption, that the iron walls of a pan necessarily neutralize and destroy the efficiency of sodium under all circumstances, and his experiments based thereon, as reported, have no real applicability to the case, as I said in my Buffalo paper. I believe that, apart from the "self-confidence" of which Mr. K. (if I apprehend him aright) accuses me, I can appeal to the *facts* I have set before your readers to sustain these claims.

I also claim that Mr. Kustel's opinion that sodium is "too expensive" to be applicable as I propose, is untenable in the extreme. As a *reductio ad absur-*

dum, let us suppose that *it were necessary*, as he believes, in the translation to amalgam of the silver in an ore, (the chloride, for instance,) to use an *equivalent* quantity of sodium. Then, as 1 lb. avoirdupois of sodium is equivalent to 4.7 lbs. of silver, or about 75 ozs., worth, at $1.29 per oz., $96.75, it is necessary to show cause why the cost of sodium must approach this latter sum (in coin) per lb. to render its use even for "decomposing" chloride of silver unprofitable, and to give any currency to this "idea" of Mr. K.

I fear it may be necessary for me to add here, *distinctly*, that these calculations are intended only as illustrative; else I might be accused of justifying the direct use of sodium as a reducing agent in silver-metallurgy, the time for which has not yet come.

HENRY WURTZ.

* Mr. Kustel's last attack, to which this is a reply, is published in another portion of to-day's issue of the JOURNAL OF MINING.—ED.

† I may here state to your readers, Mr. Editor, that many further results have been obtained with sodium, which we are not yet at liberty to give to the public; others are not yet sufficiently matured; and there are still others of which we have as yet only general, though generally highly satisfactory reports, and await the details before publishing.—H. W.

MEETINGS.

Lode-Star Gold Mining Company, annual, at 326 West Thirty-second street, Dec. 3, 1 P.M.; Columbia Gold Mining Company, annual, at 326 West Thirty-second street, Dec. 3, 12 M.; Valley Coal Company, at 55 Liberty street, Nov. 9; Kanaka Gold Mining Company, at 42 Pine street, Nov. 14; Pacific Coal Company, 38 Broad street, room No. 7, Nov. 24, 3 P.M.; White Mountain Copper Company, at 28 Broadway, Nov. 22, 12 M.; Golconda Gold Mining Company, 119 Broadway, Nov. 23, 12 M.; St. Margaret's Copper Company, 43 Pine street, Nov. 24; Consolidated Silver Mining Company, at 73 Broadway, Nov. 13; Brooklyn Coal and Oil Company, at corner Church street and Park Place, Nov. 15.

DIVIDENDS.

Rutland Marble Company, 38 Broad street, 5 per cent., Nov. 20; Tar Farms Petroleum Company, 10 Pine street, 1 per cent., on or after Nov 15; New York and Alleghany Oil, 23 Liberty street, 10 per cent., on or after Nov. 14; Advance Oil Company, Pittsburg, Pa., 4½ per cent., payable on demand; Central Petroleum Co., 8 Pine street, 1 per cent., Nov. 15.

ASSESSMENTS.

South Side Mining Company, 50 cents per share; Superior Mining Company, 50 cents per share; Rockland Copper Company, $1 per share, payable Jan. 1, 1867.

Original Papers.

[WRITTEN FOR THE JOURNAL OF MINING.]

THE ELECTRO-POSITIVE METALS—No. 2.

THEIR PREPARATION.

By JOSEPH HIRSH, Ph. Dr.

Electricity, in the present condition of knowledge, is an expensive force. Invention, consequently sought after a cheaper and more practical method for the production of the newly-discovered element. Gay, Lussac and Thenard made the first successful efforts in this direction, by melting the hydrate of potash with metallic iron at a white-heat. They employed for this purpose a gun-barrel, coated with fire clay, and filled with iron filings or spirally-wound wire in lengths of about half an inch, and placed in a furnace in an inclined position, both ends extending outside of the same. The higher end of the inclined barrel is filled with caustic potash in small pieces, while a glass tube leads from the barrel into a mercury pot; a wire basket is suspended on this part of the barrel in which is placed charcoal for the purpose of heating the barrel. The lower end of the barrel is connected with a copper receiver, filled partly with petroleum. A lively fire is at first started in the furnace, until the middle of the barrel is white hot, while the higher end, reaching out of the same, is kept cool by a flow of water, or wet cloths, so as to keep the potash solid. After the center of the barrel has been kept at the degree of heat mentioned, for a few moments, the cooling wet cloth is removed, and the basket, mentioned before, is filled with glowing coal, so as to melt the potash, which then will run downward in the barrel, and, meeting the white hot iron, will be decomposed, the latter becoming oxidised partly at the the expense of water contained in the hydrate, so that vapors of potassium and hydrogen are set free, which are conducted into the copper receiver, where the potassium condenses, while the hydrogen passes off, looking 'smoky;' occasionally from an admixture of potassium, which is carried along if the reaction takes place too vehemently. In this case the vapor takes fire in the atmosphere, which shows that the hydrate in the highest part of the barrel melts too fast, and the amount of coal in the basket referred to, has to be diminished. When all the hydrate is melted, the development of gas ceases and the process is finished. The apparently strange phenomenon of reduction of potassium by the iron may be explained by the fact, that in the first instance a mixture of oxides of iron and potassium is formed, for the formation of which the water of the hydrate cannot furnish a sufficient quantity of oxygen, which then is partly taken from the potash. This, also, explains why for this process the hydrate must be melted in a closed crucible immediately before reduction, as even the most minute quantity of water is sufficient to prevent the reduction of the potassium, so that hydrogen will be the only product obtained. Occasionally, in this process, the development of gas ceases prematurely. This is generally caused by insufficient heat, which permits the hydrate to flow through the gun barrel undecomposed into its lowest part, where it solidifies, obstructing the exit of the gas. This may occasionally be remedied by applying a hot fire to the part containing the obstruction, which then will melt. Should this fail, the process has to be discontinued; if the coating of fire clay was not well applied, it may fall off and expose the gun barrel to the fire, which will soon destroy it.

The amount of potassium, produced in this manner is about one quarter of the hydrate employed, or one-third of the entire potassium contained in the hydrate. The remaining two-thirds of potassium are united with the protoxide of iron. This mixture forms a hard substance in the barrel, soluble only with great difficulty in water, and consists of a mixture of the suboxides of iron and potassium in such a proportion that the former contains several times the amount of oxygen contained in the suboxide of potassium. That this oxide is not the common oxide of potassium, or potash, is proved by the fact, that water does not decompose the mixture, which necessarily would follow, if potash was present, this substance having a greater affinity for water than for the protoxide of iron, which, by the way, also possesses great affinity for water.

As a great deal of potassium is lost with the hydrogen, the amount of the metal collected hardly gives a fair guide to the composition of the residuum. But if, as the average results of this process show, twenty-three per cent. of the hydrate, or one-third of the metal contained in it, are obtained, it will appear that the oxygen of this one-third of the hydrate, together with the oxygen of the three-third or three atoms of water, have gone over entirely to the iron, while of the two remaining atoms of potash only one-half of the oxygen unites with the iron, the other half forming with the potassium the suboxide of that metal. The process may be represented by the following equation:

$$3\,(KO,HO) + Fe = 5\,FeO + K_2O + K.$$

In this process the weight of iron has to be at least three times that of the potash employed.

To prevent the deleterious action of an oxide, possibly present within the gun-barrel, it is safest, after heating the latter to pass a current of hydrogen through it, which has been dried over chloride of calcium, before introduction of the hydrate. The hydrogen reduces any oxide of iron present, and carries off the newly-formed water.

Brunner's method for the production of the metal came next into favor. He used charred cream of tartar, (a mixture of carbonate of potash and carbon) together with wood charcoal, the latter amounting to seven per cent. of the cream of tartar, employed. This charcoal is only added, to prevent the liquefaction of the mixture at the high temperature, when it might boil over, and, solidifying in the condenser, would stop the process of reduction. The mixture was placed in an iron retort (mercury bottle), heated in a blast furnace. The reduction takes place at a white heat, the result being three per cent. of pure metal of the weight of bitartrate employed, while a a considerable portion of the metal is changed into a black amorphous mass, distilling over with the pure potassium, and frequently obstructing the condenser, when a pointed iron rod has to be used, to remove the obstruction. The quantity of this amorphous mass is influenced by the amount of charcoal used.

[WRITTEN FOR THE JOURNAL OF MINING.]

THE PAHRANAGAT SILVER REGION.

By CHARLES SCHENK, M. E., ETC.

[CONCLUDED FROM OUR LAST.]

LOGAN SPRINGS, PAHRANAGAT, NEVADA,
September 11, 1866.

EDITOR JOURNAL OF MINING:

In the foregoing part I tried to make you acquainted with the rocks, in which are deposited our silver ores. A few more remarks about the ledges may find here their right place. A general main course in the direction of this cannot be proved yet; they run in every direction. Only so much can be seen, that the main ledges in size and in goodness of ore run pretty much from north-east to south-west, as the Illinois, Indiana, Webster, Virgin Silver, etc. The best of them can be traced many hundreds of feet along the surface of the mountains, descending into deep canons and showing a thickness of 2 to 8 feet and more. The mass of the ore enclosed is quite a different body from the bed rock on both sides, proving hereby the well-defined character of the lodes. To the horizon they are more or less inclined, some being very nearly vertical. And now let us take a look at the valuable contents of these veins, which contents attracted so much the close attention of the first discoverer, who was hunting in these secret and quiet mountains for Panaka (Indian name for ore) and who was first brought by a poor Indian to the lode called Ely and Sanderson. The observing eye of the new comer, who is going from ledge to ledge, to study the district, soon distinguishes three different classes of silver ore—different in physical and chemical properties:

I. Argentiferous galena.

II. Real silver ore.

III. Argentiferous copperg-lance.

1. Argentiferous galena is found in abundance throughout our mountains; nevertheless the working of this ore will yet be for some time, according to my knowledge, a doubtfully paying operation, for the following reasons: The ledges filled with argentiferous galena are of inferior quality, regarding thickness and well-defined character. The lead ore that they carry is very often divided through too large a quantity of quartz; or the lead ore shows a great amount of oxyde of iron with more or less quartz. You easily perceive that to get one ton of pay ore, too many mechanical operations are necessary, (dressing, puddling, etc.,) which would raise the costs of the ore, fit to be put in the furnace, up to 40 and 45 dollars per ton. The expense of separating quartz, etc., by mechanical operations, from the pure ore, cannot be saved, the fire process being the only way in which to work argentiferous galena. The cost of building furnaces is also considerable; there being necessary one reverbaratory furnace to roast the ore, one stack furnace to melt it, and one cupelling furnace to separate lead and silver. The necessity of puddling and roasting the ore, demands a crusher and pulverizer; the stack and cupelling furnace demand some kind of machinery to produce a current of compressed atmospheric air. It is also certain that the acquisition of fire-proof material for the inside of a stack furnace will be here of considerable expense; alkalies, in the state of carbonates, being present in all our clay sorts. It is a known fact that carbonates of soda and potassa bring into fusion by their presence—already at a low heat—clay, sandstone, and other fire-proof material.

2. The second class of ore found in Pahranagat is called the class of real silver ores. They represent in majority a mechanical mixture of quartz and sulphurets of silver, silver-glance. Besides the sulphurets of silver are present native silver (Virgin silver lode, Hohenlinden lode, Santarita lode.) choride of silver or hornsilver (Santarita) also little silver ore and ruby silver.* Here is a field of for operation the millman. The best class of silver ores for his method of extraction can be found; a sometimes too intimate mixture of copper, lead, etc., with these real silver ores can certainly not be an obstacle to his energy, remembering that the average value per ton of ore is 40 to 50 dollars. Most of all the great veins in the district offer us ore that

can be brought more or less under Class II. The value of the ore from all these lodes is stated by many assays, and in none of them does it go below $100 per ton. A few days ago a gentleman of my acquaintance, an experienced millman, finished the working of about 1690 pounds of ore. He wanted to test the ore on a large scale, and for this purpose he constructed a very rude arastra. No chemicals were at his disposal, except common salt, when he commenced to work. Nevertheless by this rough style of working, he produced six pounds of retorted silver, of a fineness which we did not anticipate, making it really unnecessary to do any refining.

3. Argentiferous copper-glance, the third class of ore in our district, is deposited in only a few lodes; one of them called "Green Monster." The name already indicates the size of it. A direct amalgamation of ore belonging under Class III, is not very advantageous. The best way to work this ore demands a series of roasting and melting operations, to produce what is called *black copper*, from which the silver may be extracted by lead or quicksilver.

You may perceive from the above lines that nature has deposited in the mountains of Pahranagat district treasures of precious metals, which by labor and capital can easily be gained. We here will not hesitate to open the dark channels, to bring to light silver ore and silver, accepting thankfully the gifts of nature, which gifts may help us to enjoy life in a comfortable manner, to reach that degree of happiness that is possible on earth, and to be the helping friend of the poor and afflicted.

[WRITTEN FOR THE JOURNAL OF MINING.]

HOW TO MAKE MINING INVESTMENTS REMUNERATIVE.

By W. S. Keyes, M. E., and Metallurgist, formerly of Freiberg Saxony.

[CONCLUDED FROM OUR LAST.]

During the prevalence of the wild mining mania it was worse than useless to try and talk reason to the infatuated hordes of mining speculators. Crude theories, the quack panaceas of ready-made men of science, and the popular belief in full fledged mining experts springing forth ripe in experience and perfectly learned as Minerva from the head of Jupiter; these and similar phantasies drowned out the voice of reason, and stifled the warnings of honorable and intelligent men of science and experts in the true sense of the word. Some two and a-half years since, Mr. Ashburner, a most trustworthy mining engineer, and myself, were refused admisson to a mine in Washoe, on the ground that "some fellows were running down the mines, and hurting the stock." Such a refusal, and for such a cause, can be considered in no other light than a personal compliment and as an evident acknowledgment of a poor mine. If a mine will not bear the inspection of a competent and veracious mining engineer, its stock ought to fall, and the duped payers of assessments should be warned at once. The mine to which reference has been made has long since disappeared from the list of quotations. May a like fate soon overtake all others of a similar character. Now that the fever has cooled down and returning reason begins to assert her supremacy, the voice of the mining engineer will, perhaps, be listened to, and his exhortations will be needed to prevent an irrational withdrawal of confidence in mining investments, and to check a depression as far below the truth as the former hallucinations were above and beyond it. Mining has been, is, and will continue to be, a field for employment for nations, communities and individuals. Rash and unthinking enterprises will flourish for a time, collapse and bury in their ruins the accumulations of the unwary; the cunning, politic and unscrupulous speculator will revel and grow fat on his nefarious earnings; ignorance and folly will move on in their wonted circle; one generation suffers and a succeeding one, without regarding the experience of the past, follows fatedly the phantom which misled its predecessor. On the other hand, a judicious mining adventure, if it yield no return, cannot be a source of great loss; a few thousand dollars spent in exploring a mine are sufficient to establish its excellence or worthlessness. Always supposing that the location be judiciously selected; that the presiding officers are honorable men, and that the resident director is master of his profession truthful, and of business aptitude. Let the projectors of a mining enterprise take the same interest, make the same investigations, use the same prudence, caution, and foresight, which they would feel to be incumbent upon themselves to take should they contemplate the establishment of a new line of railway or telegraph, a cotton mill, a paper factory, or any other enterprise of a speculative character.

Let them regard first the *maximum* for cost of mill, freight of machinery, feasibility or difficulty of access, cost of living and nearness to a regularly established highway, river or railroad. Next, let them make an estimate of the *minimum* of yield sufficient to cover all fairly estimated expenses; looking, not upon the brightest side of the picture, but on the contrary, on the darkest. The millions which are monthly produced from the widely spread mineral fields of our far-Western States and Territories, are a tangible proof of the profitableness of mining. Mankind soon ceases to prosecute a kind of business which fails to return an adequate compensation for time and labor expended. When our placers became in a measure exhausted, our energetic and vigorous mining population turned their attention to the more reliable and lasting gold-bearing quartz veins, to the silver, the copper, and the coal. A man's personal labor, unaided but by the simplest and most rudimentary metallurgical appliances, was sufficient to collect the precious dust from the placers. Hydraulic mining still further lowered the minimum yield sufficient to return a profit. And the later and more improved construction of mills has started again, into a life of vigorous activity, our gold-bearing veins, which, for a time, were neglected for the silver lodes of the inner States and Territories. The very large per centage of dividend-paying mines of California, compared with the whole number worked, affords a firm basis for reasonable calculations. The tangible yield of these mines is no vague theory or estimated possibility; it is a solid, indisputable fact, patent to the senses of the most unbelieving. The field is wide and not yet worked to an hundreth part of its capacity, and only waits a judicious expenditure of well-directed energy to yield a glorious harvest.

MARKET REVIEW.

FRIDAY EVENING.

Mining Stocks—Prices generally have declined. The principal event of the week was the failure of the Downieville Gold Co. We notice the following fluctuations in the various Mining Stocks during the past week: Alpine, for which $1 32 was bid on Tuesday, was sold to-day for $1 40, with an upward tendency; American Flag has declined still more, and is quoted $2@2 45; Atlantic and Pacific, for which $5 was bid last week, has declined to $4 75; Bates & Baxter gold, $3 50; Benton gold has declined from $1 95 to $1 75; Boscobel gold, which had advanced last week to $1 50, has experienced a reaction, and closes to-day at $1 25; Bullion consolidated, quoted last Friday at $5 20, has fallen still lower, and sold to-day at $3 50; Church Union gold has been steady, with a slight advance to-day, closing at $2 80; Colorado G. and S. Ore Separating Co. fell during the past week to $1, and $1 25 asked to-day at closing; Consolidated Colorado, a new stock, which sold for 35c. Tuesday, has fallen to-day to 15c.; Consolidated Gregory has been active, and has advanced from $13 90. Tuesday's quotation, to $14 75; Corydon, $5 70; Downieville gold, quoted last week, at $2 90, fell yesterday to 55c., closed with sales to-day at 50c.; Echla sold at $3 25; First National, $4 10; Fall River gold quiet, with sales at 75c.; Gilpin gold has advanced, with sales at $3 70; Gold and Silver Separating Co., without much variation, $4 95; Gunnell gold has been unsteady, closing at $1 10; Holman gold, quoted last week at 33c., fell to 20c. last Tuesday, with sales at 25c., closed to-day with sales at 28c; Hope gold, $1 40; Kipp & Buell gold has declined to $1 90; La Crosse is still on the decline, closing at $1 70; Liebig, 50c.; Montana gold dull at 33c.; New York has been quiet at $1 95; Nye gold, 20c.; Pahranagat silver, $2 40; Peoples' gold has declined from $4 to $3 15, with sales at $3 75 and $3 85. Quartz Hill has declined to $5 25; Rocky Mountain dull, $4 80 asked; Smith and Parmalee gold quoted last week at $12 25, fell to $11 25 yesterday, and sold at $10 95 to-day; Texas gold has advanced to 25, with sales at that figure; Caledonia copper, for which $1 25 was asked at the beginning of the week is offered to-day at $1; Central copper $40, asked $48; Evergreen Bluff, $16; Franklin copper has advanced to $14; Huron, $43; Wallkill lead has been active, with a steady decline, selling yesterday at $2 98 and $3, to-day at $1 90 and $2 05.

Petroleum Stocks are quoted as follows: Bennehoff Run $5 05; Buchanan Farm, 20; Central $1 25; Clinton Oil, $1 50; First National, 5c.; Manhattan, 15c.; N. Y. & Allegheny, $5 25; Pithole Creek, $1 50; United States, $5 50.

Coal Stocks show an advance.

	Offered.	Asked.
Cumberland Coal, from	67½	70¼
American Coal	71¾	73
Wilkesbarre Coal and Mining	70	70¾
Spring Mountain	..	84

Government Stocks are firm, with a slight advance.

	Offered.	Asked.
U. S. 6's, '81	114⅛	114⅜
5.20's, '62	107	108
10.40's, reg'd	109⅜	..
7.30's, 1st series	107⅜	107⅛
7.30's, 2d series	..	106

Foreign Exchange is dull. Bills at 60 days on London are quoted at 108¾@109 for commercial; 109⅛@109½ for bankers'; do. at short sight, 110⅛@110½; Paris at 60 days, 5.18¾@5.13¾; do. short sight, 5.13¾@5.12½.

Gold was 146⅜ at 2 P. M.

Copper.—Sheathing needed and selling at 43c.; yellow metal, 32c.; Bolts, 43@45c.; Baltimore refined ingot, 30c.; Lake refined ingot, 30¾@31¾.

Lead.—Galena nominal; Spanish quoted at 10@10½; German refined, 10½; Bar do., 10¾; Pipe and Sheet, 11.

Tin—Banca quoted at 34@35c.; Straits, 31½@32½; English, 32½.

Petroleum is dull and heavy. We quote crude, 40@47 gr. in bulk, 15½@16c.; do. do. in barrels, 22½c.; refined, 110 deg. test, light straw, 31c.; do. do. light straw to white, 32@33c.; do. do. prime light straw to white, 35@35½c.; do. do. standard white, 30 @30½c.; do. do. prime white, 37½c.; free oil, 54c.

THE COAL TRADE.

FRIDAY EVENING, NOV. 9, 1866.

Wholesale.—Trade has been very quiet the past week, in both foreign and domestic. There has been very little call, and the warm weather of the past two days has not helped matters any. There will, however, be more doing in the next three weeks, for dealers must stock up prior to the close of navigation. Should cold weather drop suddenly upon us, hastening the close of Canal transportation, Coal will be in more demand, and prices will range higher.

Retail.—There is a steady small trade doing, the advance at the last auction sale seemingly having convinced consumers that Coal is as low as it will be, and they are ordering their winter supply. In the early part of the week trade was quite lively, but the last two days of warm weather has again quieted matters; prices, $7 25 to $8 50, delivered.

Reports of the Coal Traffic for the Last Week

as compared with those of the corresponding week last year, are as follows:

	1865.		1866.		
	WEEK.	TOTAL.	WEEK.	TOTAL.	INC. & DEC
Phil. & Reading R.R.	75,155	2,612,595	65,496	3,237,231	*i* 659,621
Schuylkill Canal	36,605	867,526	30,466	1,164,949	*i* 297,423
Lehigh Val. R. R.	32,394	1,272,728	32,161	1,599,782	*i* 327,053
Lehigh Canal	29,785	759,442	35,556	943,716	*i* 184,274
Del & Hudson	27,910	605,297	31,050	1,160,394	*i* 555,097
Scranton North	10,185	189,881	11,098	363,988	*i* 174,307
Scranton South	20,396	572,470	22,804	907,734	*i* 335,264
Penn'a. Coal Co. Rail	17,214	426,656	19,102	320,664	*d* 36,272
by Canal	2,339	36,023	828	23,241	*d* 12,782
Wyoming North	.....	.....	.....	97,708	*i* .....
Wyoming South	.....	275,071	12,670	420,379	*i* 145,308
Shamokin	11,457	586,237	11,438	467,381	*i* 81,144
Trevorton	466	19,367	881	44,637	*i* 25,270
Short Mountain	3,567	59,798	3,027	83,059	*i* 23,262
Franklin	2,322	50,224	.....	.....	.....
Broad Top	.....	267,729	4,762	234,677	*d* 23,052
	269,525	8,671,153	281,429	11129,540	.....
	.....	.....	.....	8671,153	.....
Increase	.....	.....	.....	2,458,387	.....
Decrease	.....	.....	.....	.....	.....

Prices of Coal by the Cargo.

At New York, Nov. 9, 1866

Schuylkill Red Ash by Boat Load	$7 00@	$7 50
" Chestnut, " "	4 50	5 25
" White Ash Lump	6 25	6 75
" Steamboat	6 25	6 75
" Broken	6 25	7 00
" Egg	6 50	7 00
" Stove	6 50	7 00
" Chestnut	4 75	5 50
Lehigh White Ash Lump	6 50	7 00
" Broken	6 50	....
" Egg	6 50	....
" Stove	7 00	....
" Chestnut	5 50	....
Western Virginia Gas Coal	10 00	....
Westmoreland Gas Coal	10 00	....
Blossburg & Fall Creek	7 25	7 40

At Philadelphia, Nov. 9, 1866.

Schuylkill Red Ash Prepared	$5 50@	$6 00
" Chestnut	4 00	....
" White Ash Lump and Steamboat	5 00	....
" Broken	5 00	....
" Egg and Stove	5 25	....
" Chestnut	4 00	....
Locust Mt. Lump, and Steamboat	5 25	....
" Broken	5 25	....
" Prepared	5 50	....
" Chestnut	4 25	....
Loxberry Coal	5 75	....
Shamokin	5 75	....
Franklin, (Lykens Valley)	6 25	....
Broad Top	5 50	....

Scranton Coal at Elizabethport.

Lump	$5 25@	— —
Steamer	5 75	— —
Grate	6 00	— —
Egg	6 00	— —
Stove	5 75	— —
Chestnut	4 75	— —

Prices for Pittston Coal at Newburgh.

Lump, per ton of 2240 lbs	$6 25	... ...
Steamer, " " "	6 35	... ...
Grate " " "	6 40	... ...
Egg " " "	6 50	... ...
Stove " " "	6 75	... ...
Chestnut " " "	5 00	... ...

70 cents per ton additional for delivery at N. York

Lehigh Coal at Elizabethport.

Lump	6 75@	$7 00
Steamboat and Broken	6 50	— —
Egg	6 50	— —
Chestnut	5 50	6 00
Stove	...	7 00

George's Creek and Cumberland Coal.

Run of mine, f. o. b. at Locust Point	$5 75@	... ...
At Georgetown	5 50	... ...

At Baltimore Nov. 3, 1866.

Wilkesbarre & Pittston W. A., wholesale	$7 50@	$7 75
" " " retail	8 50	8 75
Lykens Valley & Sunbury R. A., wholesale	7 50	7 75
" " " retail	8 50	8 75

Prices of Foreign Coals.

[REPORTED FOR THE JOURNAL OF MINING.]
BY H. L. PARMELEE & BRO., 32 Pine street, N. Y.
Duty $1.25 per ton.

Liverpool Gas Caking	$10 75
" " Cannel	15 50
" House "	18 00
" " Orrel	16 00

Per ton 2240 lbs.
PRICES FROM YARD:

Liverpool Orrell, screened	20 00
" Cannel, "	22 00

per ton 2000 lbs. delivered.

Prices of Provincial Coals.

[REPORTED FOR THE JOURNAL OF MINING.]
BY LOUIS J. BELLOMI, JR., 45 Pine street, N. Y.
Duty $1.25 per ton.

Block House (on board)	$1 75 gold.
Gowuie	1 75 "
Lingan	1 75 "
Sidney	2 28 "
Pictou	2 25 "
Glace Bay	1 75 "
International Co.'s	1 75 "
Slack Coal	75 "

Coal Freights.

Canal Expenses from Mauch Chunk to N. Y.

Lehigh Canal (net)	58
Delaware Division Canal	42
Delaware & Raritan Canal	50
Towage, New Brunswick to New York	25
Freight, Mauch Chunk to New York	$1 55
Total	$3 30

Freights on Coal to Elizabethport.

L. V. R. R. from Mauch Chunk to Easton	$1 15
C. R. R. of N. J., Easton to Elizabethport	1 70
	2 85
Shipping expenses at Elizabethport	25
Total	$3 10

Via Morris Canal.

Lehigh Canal	58
Morris "	90½
Towage	12½
Freight	$1 80
Total	$3 40½

Expenses from Mauch Chunk to Jersey City for Reshipment.

Lehigh tolls (net)	— 58
Morris tolls	— 75
Freights	1 75
Reshipping	— 30
Total	$3 38

From Port Richmond, Philadelphia.

Reported by the Coal Exchange, Nov. 9.

Albany (& towing)	$1 70@	— —	Newburg	$1 68@	— —
Alexandria	1 50	— —	Newburyport	2 40	— —
Appanoag	2 00	— —	New Haven	1 80	— —
Aspinwall	7 00	— —	New London	2 05	— —
Bangor	2 00	— —	Newport	1 90	— —
Bath	2 40	— —	Newport, R. I.	1 90	— —
Baker's Landing	—	— —	New York	1 60	— —
Bedford	—	— —	Norfolk	1 62	— —
Boston	2 50	— —	Norwalk	...	— —
Bridgeport	1 80	— —	Norwich	2 00	— —
Bristol	1 90	— —	Pawtucket, & tow'g	2 25	— —
Cambridgeport	2 40	— —	Petersburg	2 00	— —
Catskill (& tow)	2 00	— —	Portland	2 00	— —
Charleston, S. C.	1 50	— —	Portsmouth, N. H.	2 50	— —
Charlestown	2 10	— —	Providence	1 75	1 90
Chelsea	2 12	— —	Provincetown	1 90	— —
Commercial Point	2 30	— —	Poughkeepsie, & t'g	1 60	— —
Davenport	2 00	— —	Port Chester	1 60	— —
Delaware City	— 80	— —	Plymouth	2 25	— —
Dighton	2 00	— —	Richmond	2 00	— —
East Greenwich	1 80	— —	Rockland	2 30	— —
Fall River	2 00	— —	Roxbury	2 25	— —
Fort Monroe	1 60	— —	Saugus	2 50	— —
Fredericksburg	—	— —	Sing Sing	1 60	— —
Georgetown	1 50	— —	St. Johns (in gold)	2 00	— —
Gloucester	2 30	— —	Salem	2 50	— —
Jantown and tow	...	— —	Savannah, Ga	2 00	— —
Lynn and dis	2 25	— —	Stonington	2 25	— —
Milton	2 50	— —	Washington, D. C.	1 50	— —
Malden	2 50	— —	Weymouth't'g&pil'g	2 00	— —
Mobile	5 10	— —	West Point & tow	1 70	— —
Neponsett	0 00	— —	Wilmington	1 00	— —
New Bedford	2 00	— —	Winterport	2 00	— —

From Elizabethport.

New York	$ 70@	— —	Portland	1 75@	— —
Fall River	1 40	— —	Newburyport	2 10	— —
Newport	1 40	— —	New London	1 30	— —
Boston	1 75	— —	Pawtucket	1 50	— —
Norwich	1 35	— —	Taunton	1 40	— —
Providence	1 40	— —	New Haven	1 20	— —
Norwalk	1 20	— —	Portsmouth	2 00	— —
Middletown	1 35	— —	New Bedford	1 40	— —
Hudson	1 00	— —	Bridgeport	1 20	— —
Lynn	—	— —	Hartford	1 60	— —
Salem	1 75	— —	Albany	1 00	— —

From Baltimore.

To Philadelphia	$1 75@	— —	Boston	3 25@	— —
New York	2 50	— —			
do by Canal	2 75	— —			

From Newburgh.

Stamford	$1 25@	... ...	Greenbush	$ 55@	... ...
Norwalk	1 35	... ...	Coeymans	50	... ...
Bridgeport	1 35	... ...	Coxsackie	45	... ...
New Haven	1 35	... ...	Stuyvesant	45	... ...
New London	1 45	... ...	Hudson	40	... ...
Norwich	1 60	... ...	Catskill	40	... ...
Mystic	1 45	... ...	Saugerties	40	... ...
Stonington	1 45	... ...	Barrytown	40	... ...
Bristol	1 55	... ...	Rhinebeck	30	... ...
Newport	1 55	... ...	Poughkeepsie	25	... ...
Fall River	1 55	... ...	Fishkill Landing	20	... ...
Providence	1 60	... ...	Cold spring	30	... ...
Dighton	1 60	... ...	West Point	30	... ...
Warren	1 60	... ...	Peekskill	40	... ...
Pawtucket	1 75	... ...	Haverstraw	45	... ...
Boston	2 00	... ...	Sing Sing	50	... ...
Troy	60	... ...	Nyack	50	... ...
West Troy	60	... ...	Tarrytown	50	... ...
Albany	55	... ...	Yonkers	55	... ...
New York	70	... ...			

From Georgetown or Alexandria.

To Philadelphia	$2 50	— —	Boston	3 25	— —
New York	2 50	— —			

Foreign Freights.

Sydney to N. Y	$4 50
Lingan	4 50
Cow Bay	4 50
Glace Bay	4 50

Schuylkill Coal Trade by Railroad and Canal,

For the week ending Thursday, November 10th, 1866:

	RAILROAD.	CANAL.
From St. Clair	22,954	...
Port Carbon	6,737	9,833 00
Pottsville	104	231 15
Schuylkill Haven	18,999	19,471 00
Auburn	2,083	...
Port Clinton	9,124	931 00
Total for week	65,491	30,466 15
Previously this year	3,171,735	1,134,483 14
Total this year	3,237,231	1,164,949 09
To same time last year	2,577,610	867,526 05
Increase	659,621	297,423 00

Little Schuylkill Coal Trade to Saturday, Nov. 3.

	Co.'s Mines. Tons.	Railroad. Tons.
From December 1st, 1865	119,003	233,973
Same time last year	85,164	194,196
Increase	33,839	39,806
East Mahanoy R. R.		338,571
Last year		350,585
Decrease		12,011
Increase on Railroads		27,884

Lehigh Coal Trade, for Week Ending Saturday, November 3.

OPERATORS.	RAILROADS. Week.	Total.	CANAL. Week.	Total.
Ashburton Coal Company	....	757	....	163
Audenreid	114	14,616	483	11,891
Baltimore Coal Company	861	31,920	311	11,089
Buck Mountain	1,242	51,534	876	21,581
Central Coal Company	....	....	....	....
Coleraine	801	30,715	1,307	21,593
Council Ridge	1,947	85,342	....	....
Coxe Bro. & Co	492	15,889	528	4,956
Conery, John	58	3,491	....	....
Coal Run Coal Company	....	155	....	....
Delano	....	24,982	....	5,305
East Sugar Loaf	3,367	168,356	....	....
Ebervale Coal Company	1,569	50,716	1,434	22,933
Franklin Coal Company	409	17,586	287	10,744
Ger Pa Coal Company	222	43,437	64	24,187
Glendon Coal Company	94	23,003	965	4,149
Germania Company	77	8,626	185	9,160
Hazleton	4,661	189,628	2,398	68,743
Harleigh	650	45,044	734	14,536
Highland Coal Company	....	....	....	....
Honey Brook Coal Company	2,930	114,928	1,701	26,866
Hull & Co. Thomas	....	....	1,052	11,898
Jeddo (G. B. M. & Co.)	3,355	129,139	1,999	49,862
Knickerbocker	....	22,481	....	9,281
Laubach, J. & Co	....	....	....	1,187
Lehigh Zinc Company	....	7,464	....	....
Lehigh & Susquehannah	....	16,031	....	11,555
Lehigh Coal & Navigation Comp'y	....	....	12,231	356,772
Mahanoy	....	10,935	....	....
Mount Pleasant	174	19,547	195	5,761
Meadow, B. (D. W.)	52	1,983	....	....
McNeal Company	212	51,098	....	19,358
Meyers, H.	....	8,582	....	....
Mount Etna Coal Company	....	....	....	4,327
New Boston C. Co.	....	5	....	....
New Port C. Co.	204	588	475	763
New York & Lehigh	2,138	61,053	....	....
New Jersey	64	3,446	65	5,109
North Mahanoy	....	....	161	8,415
Packer, Skeer & Co.	....	....	2,005	77,297
Patterson, W. T.	....	....	....	....
Parish & Thomas	351	18,943	....	405
Primrose Coal	....	....	100	579
Rathbura, Stearns & Co.	1,011	35,449	....	....
Reber, J. B. & Co.	29	6,759	....	....
Sharpe, Weiss & Co.	....	....	837	26,590
Stout Coal Company	1,029	41,631	958	15,474
Spring Mountain	1,546	124,676	62	5,780
Silliman	1,090	42,237	....	....
Shamokin Coal Company	....	2,202	....	....
Thomas Coal Co	....	....	564	1,319
Trenton Coal Company	10	258	....	379
Union	67	999	428	2,852
Wilkesbarre	634	53,195	2,103	40,050
Woodside Company	....	....	....	....
Warrior Run	193	6,637	396	6,220
Wyoming	308	2,752	....	1,358
Walter Bro. & Co.	....	....	162	12,755
Other shippers	177	11,099	408	10,477
Total	32,161	1,599,782	35,556	943,716
Corresponding week last year	32,333	1,272,728	29,784	759,441
Increase	....	327,053	5,771	184,274
Decrease	172			

WEEKLY COAL TRADE CIRCULAR.

NEW YORK, Nov. 9, 1866.

Prices remain without much change. The period of Canal navigation is drawing to a close; not over three weeks remain, and yet there is an indifference on the part of the trade making purchases which is quite unusual—occasioned by the quietness prevailing amongst the retail trade. It is not likely that trade will revive again this season, as the supply will no doubt remain fully equal to the demand. It is expected that orders will be more abundant through the current month to the East and North, where Winter places an embargo upon navigation; as stocks in dealers' hands are not heavy, and those who cannot be supplied through the Winter months must provide in advance for their wants.

L. A. & Co.

FOREIGN MARKET REVIEW.

Weekly Metal Report.

LONDON, E. C., Oct. 19, 1866.

The Metal market is very dull, and prices have further given way, reaching nearly the lowest point touched during the panic.

IRON.—Manufactured Iron both in Wales and Staffordshire sells slowly, and for a good specification makers are open to concession in price. Rails have been sold at very low prices. Scotch Pig Iron, 54s 3d. cash.

COPPER.—English from second hand can be bought under smelters' quotations, and foreign is also easier to buy. We quote Burra and Walleroo, £86 to £86 10s.; Chili bars, £77 in Liverpool.

TIN has declined to £79 for Straits, and £80 for Banca, both sellers, buyers, 10s. less. English Tin is very dull. The Dutch market is steady at 45½f.

TIN PLATES maintain their position for immediate delivery; for forward delivery prices tending in buyers' favor.

LEAD commands full prices, and is in good demand.

SPELTER.—The last transactions reported have been at £20 5s. to £20 7s. 6d. for parcels on the spot, and £20 15s. for special outports.

VON DADELSEN & NORTH.

Oil Trade Circular.

LONDON, October 19, 1866.

The market has assumed a decidedly firmer tone, and an advance in prices of from ½d. to 1d. per gallon may be quoted. This may be attributed to three causes—a large export demand, a decreasing stock, and the falling off in the importations. No sales can now be effected under 1s. 10½d. to 1s. 11d., with a prospect of a further upward tendency.

The following are our latest quotations

PETROLEUM OIL.—English refined, per gallon, 1s. 7d. to 1s. 9d., in Liverpool; American do., 1s. 10½d. to 1s. 11d.; do. Crude, per ton, £16 to £17.

SPIRITS.—English and American, 10d. to 1s. 3d.

PARAFFIN.—Refined, per gallon, 1s. 6½d. to 1s. 9d.; Crude, per ton £7 to £8.

LUBRICATING OIL.—English refined, £10 to £20.

LUBRICATING GREASE.—£5 to £16.

PARAFFIN WAX—3d. to 1s.

SAN FRANCISCO STOCK MARKET.

Latest by Telegraph.

SAN FRANCISCO, Nov. 5

Name.	Bid per foot.	Name.	Bid per foot.
Gould & Curry	450	Crown Point	1100
Savage	1425	Yellow Jacket	700
Cholar-Potasi	125	Belcher	60
Ophir	90	Alpha	
Hale and Norcross	1800	Imperial per share	110
Cal. Steam Navigation Co.	68	Cal. State Telegraph Co	34½

NEW YORK METAL MARKET.

(CORRECTED WEEKLY.)

COPPER	Ingot..Lake Superior, ₱ lb., cash	..	30¼	.. 30½
	Baltimore	..	30	.. ..
	Pig Chili	..	..	.. ..
	Bolts	..	43	.. 45
	Braziers	..	45	.. ..
	Sheathing	..	43	.. ..
	Yellow metal	..	32	.. ..
IRON—Pig	No. 1 Scotch, ₱ ton	..	55 00	.. ..
	No. 1 American	..	49 50	.. ..
	No. 2 "	..	45 00	46 00
	No. 2 Charcoal	..	43 00	44 00
Bar	Swedish, ordinary sizes	..	170 00	.. ..
	Amer. and Eng refined	..	105 00	112 00
	" " common	..	95 00	100 00
Rails, American currency		..	..	.. ..
" English gold		..	..	.. ..
Horse shoe iron		..	145 00	.. ..
Rods 5 8@11-16 rd. and sq		..	125 00	.. ..
Band		..	150 00	.. ..
Nail rods		..	122 50	185 00
Hoops		..	155 00	225 00
Sheets, Russian, ₱ lb		..	28	.. 0
" English "		..	6¼	.. 9
" American "		..	25	.. 25½
Boiler Plates, English		..	..	.. ..
" American		..	..	.. ..
STEEL	Best cast in bars, war	..	25	.. ..
	Best sheet cast, "	..	25	.. ..
	Best cast circular saw plates 46 in	..	31	.. ..
	Double shear steel, war	..	25	.. ..
	Single " " "	..	22	.. ..
	Montague & Co. C S., in bars	..	22	.. ..
	Round machinery cast	..	16	.. ..
	Best German	..	16	.. ..
	Government German	..	13	.. ..
	Eagle German	..	15	.. ..
	(L.) Blister, war	..	21	.. ..
	W. Jessop & Sons, blister, war	..	18	.. ..
	Double refined	..	26½	.. ..
	Stone Axe shapes	..	26½	.. ..
	Common blister	..	15	.. ..
	2d quality sheet	..	22	.. ..
	3d quality sheet	..	18	.. ..
LEAD	American, per 100 lbs	..	..	.. ..
	German...Gold	10	00	10 00½
	Spanish "	10	00	10 00½
	English "	..	..	.. ..
	Bar, per 100 lbs	10	75	.. ..
	Pipe and sheet	11	00	.. ..
TIN	Banca	..	34	.. 35
	Straits	..	31½	.. 32½
	English	..	32½	.. ..
TIN PLATES	IC 10-14 prime charcoal	15	25	.. ..
	IX 10-14 " "	18	25	.. ..
	IC 12-12 " "	15	75	.. ..
	IX 12-12 " "	18	75	.. ..
	IC 14-20 " "	16	25	.. ..
	IX 14-20 " "	19	25	.. ..
	IC 14-20 Roofing ch. 1st	15	25	.. ..
	IC 14-20 " " 2d	14	00	.. ..
	IC 14-20 " Coke	11	00	.. ..
	IC 10-14 Coke	11	00	14 50

SPELTER	Lohigh, per lb., currency	11	
	Foreign " gold	9¾	10
ZINC	Mussulman & Amer	13	13¼
SOLDER	No. 1	24	
	No. 2	22	
QUICKSILVER			

The British Coal Mines.

Unusual delay, says the London *Mining Journal*, has this year occurred in the issue of the ordinary annual reports of the Government Inspectors of coal mines, and the delay has certainly not been compensated by a more gratifying report; indeed, the present is the most unfavorable for some years; the number of deaths (if we except only the calamity at Hartley, in 1862) which occurred during 1865 was greater than in any year since 1860, and was 14 per cent. greater than in 1864. Not a single district shows any material improvement, whilst in some districts the deaths have increased by nearly 50 per cent. In next week's *Journal* we hope to be enabled to publish our usual tabulations, but in the meantime subjoin a comparative statement of the number of the deaths from each class of accidents. The deaths from explosions of fire-damp have nearly doubled, increasing from 94 to 168; those from falls of roofs, etc., show a diminution of 14; in shafts 21 fewer deaths have occurred than in the preceding year; but the deaths from miscellaneous accidents have increased from 194 to 272—78, showing an increase in the total deaths of the year of 117, or nearly 14 per cent., as stated above:

	1865.					1866.				
	Explosions Fire Damp.	Falls of Roof and Coal and Sides of Working.	In shafts.	Miscellaneous, underground and at surface.	Total.	Explosions Fire-Damp.	Falls of Roof and Coal and Sides of Working.	In shafts.	Miscellaneous, underground and at surfaces.	Total.
North Durham, Northumberland, Cumberland district	7	30	9	23	69	14	26	13	44	97
Southern division of Durham	3	30	16	40	89	4	22	10	46	82
North and East Lancashire	5	33	13	13	64	10	31	7	18	66
West Lancashire and North Wales	10	43	28	29	110	11	38	31	37	117
Yorkshire district	6	27	15	7	55	15	22	13	5	55
Derbyshire, Nottinghamshire, Leicestershire, and Warwickshire	11	30	9	16	66	9	36	13	24	82
North Staffordshire, Cheshire, & Shropshire	22	13	11	8	54	12	22	9	9	52
South Staffordshire & Worcester	12	51	47	9	119	8	48	22	13	91
Sou-West Div (parts of Monm'th. Glo'ster. Glamorgan, Brecon, & Devon	6	33	13	15	67	26	34	10	12	82
South Wales district	6	67	6	26	105	45	57	17	40	159
Eastern district of Scotland	1	23	6	4	34	5	17	12	13	47
Western district of Scotland	5	15	11	4	35	9	28	6	11	54
Total	94	395	184	194	867	168	381	165	272	984

The chief increase has been in the districts inspected by Messrs. Dunn, Evans and Wales, and there has also been a heavy increase in both the Scottish districts. The return (continuing that of which an abstract was published in the *Mining Journal* of Aug. 12, 1865) shows:

Names of Districts.	As computed by each Inspector for his own district.		No. employed per life lost.	Tons of coal raised per life lost.	Number of collieries.
	Males employ.	Tons coal raised.			
Northumberland, Cumberland, and North Durham	25.035	10.409.900	258	107,318	165
South Durham	33.943	14.181.433	414	172.944	161
North and East Lancashire	23.525	6.312.000	356	95.636	258
West Lancashire and North Wales	27.600	8.000.000	238	68.965	180
Yorkshire	35.000	9.300.000	636	169.091	422
Derby, Nottingham, Leicester and Warwick	27.080	7.575.000	330	99.383	205
North Stafford, Shropshire and Cheshire	21.000	5.600.000	403	107,692	226
South Stafford and Worcester	27.000	10.261.500	296	112.104	542
Monmouth, Gloucester, Somerset and Devon	26.658	6.000.000	325	73.170	225
South Wales	29.076	8.531.336	182	53.656	358
In other counties in England and Wales	—	—	—	—	—
Eastern District of Scotland	21.150	6.400.000	450	136.170	270
Western Districts of Scotland	18.375	6.400.000	340	118.518	223
Totals and averages,	315.451	98,911.169	321	100.519	3215

☞ From the Savage mine during the week ending Sept. 1st, 1,011 tons of ore were extracted, 931 tons shipped to mills; leaving 626 tons on hand. The approximate value of the above 1,011 tons is estimated at $45,145, cost of extraction $8,736, and reduction $23,414; leaving an estimated profit $23,014. For the month of August the actual products of the mine are stated to be about $100,000.

Patent Claims.

Interesting to Miners, Millmen, Metallurgists, Oil-Men and Others.

The following claims have recently been issued, from the United States Patent Office:

59,165.—QUARTZ-CRUSHER.—Monroe L. Battell, New York City:

I claim the within-described ore-crushing machine, constructed with two sets of crushing jaws, and operated by a single intermediate or central shaft, substantially in the manner herein set forth.

59,166.—ROTARY STEAM ENGINE.—Joseph B. Bennett, South Brooklyn, N. Y.:

I claim, 1st. The combination substantially as described of the spring packing plates, F, F, with the pistons of a rotary steam engine or rotary pump for the purpose of greatly reducing the loss of power by friction and other causes, as herein-before set forth.

2d. The spring valves, G, G, arranged and operated substantially as and for the purpose described, in combination with the cylinder, B, with its pistons and spring packing plates, as set forth.

59,214.—PUDDLING FURNACE.—Daniel and Joseph Hall, Wheeling, West Va.:

We claim, 1st. The improved iron-cased smoke-stack of unequal diameter at the upper and lower parts, lined with fire-brick of unequal thickness, supported on the pillars, b, b, b, b, and constructed and arranged substantially as and for the purpose herein specified.

2d. Also, the outer shell or casing, d, d, constructed and arranged substantially as and for the purposes herein specified.

3d. Also, the wrought-iron fore-plate, r, r, and the recess in the doorway in which it is inserted, in combination with the furnace-door, p, constructed and arranged substantially as and for the purpose herein described.

4th. Also, the wrought-iron side-bits, s, s, placed in a recess in the doorway of the furnace, substantially in the manner herein specified.

5th. Also, the horizontal or straight-bottomed neck, E, supported on the foundation-plate, q, resting on bearers, i, i, which are sustained by the projection, h, h, on the pillars, b, b, constructed and arranged substantially as and for the purposes herein described.

6th. Also, the ribbed binding-plates, k, k, in combination with the neck, E, constructed and arranged substantially as and for the purposes herein described.

7th. Also, the improved inclined fire-bridge, G, constructed substantially as and for the purposes specified.

59,243.—HOISTING AND DUMPING COAL.—George Martz, Pottsville, Pa.:

I claim, 1st. The combination of the platform constructed and operating as described with the breast of the chute, which tilts the rising platform into an inclined position.

2d. The arrangement of the section blocks, L, L, and the gaps, N, in the guides, operating as described.

3d. The curved face to the platform, acting in combination with the supporting breast, H, as and for the purpose described.

59,301.—DECARBONIZING FURNACE.—Samuel H. Whitaker, Covington, Ky.:

I claim, 1st. The inclosed auxiliary chamber or chambers, B, communicating with the bottom of the furnace, and provided at the top with one or more downward discharging tuyeres placed out of contact of the molten metal, for the objects stated.

2d. The annular blast-chamber, B, which surrounds the lower portion of a blast-furnace, and is provided with one or more pairs of opposite and downwardly-directed tuyeres, out of contact with the molten metal, substantially as set forth.

59,317.—STILL FOR PETROLEUM.—Allen Lapham, assignor to himself and Job Jobson, Brooklyn, N. Y.:

I claim the arrangement of the flues, g and h, and dampers applied to the still, c, substantially as set forth, for preventing the still becoming heated above the liquid therein, for the purposes set forth.

I also claim forming the lower portion of the still over the fire narrower than the upper portion, as shown, and combining therewith the flues, g, as and for the purposes set forth.

59,319.—PACKING FOR OIL WELLS.—Owen Redmond, assignor to Rufus S. Osgood, Rochester, N. Y.:

I claim a packing device for artesian wells, packing both the tubing and the sides of the well, when the said device is capable either of being adjusted higher or lower upon the tubing or *vice versa*, the tubing adjusted higher or lower within the packing, substantially as specified.

I also claim the combination of the hollow-wedge, G, and screw-collars, D, E, for the purpose of expanding the packing disk, b, substantially as described.

I also claim securing the packing device to the oil tube at any position by means of the screw, r, provided with a head or run around which passes a wire cord or chain, s, substantially as specified.

Special Scientific Brevities.

☞ Dr. A. E. Hoffman purified creosote which he had obtained warranted from beechwood tar, according to Von Gorup-Besanez's method by distillation, and only used such as began to boil at nearly 203°. The boiling point rose to 208°. This distillate agrees in all physical attributes with that described by Von Gorup-Besanez; only the specific gravity was greater, 1·075 (1·040 according to Gorup-Besanez). From an examination of the chemical behavior, the inference drawn is, that creosote is only impertectly pure carbolic acid. Hexachlooxylon is identical with chloranil. Von Gorup-Besanez contradicts this, and dismisses Hoffmann's supposition that he was working with beechwood tar creosote as untenable, as it has entirely disappeared from German commerce. Accordingly, Hoffmann's research would merely amount to a statement of the long-known fact that carbolic acid may be bought for creosote—not, however, that true creosote does not exist.

☞ Prof. Unger, the celebrated Viennese botanist and paleontologist, has recently published some remarks on the bricks of the ancient Egyptians, especially those of the pyramid of Dashour, which was built about 3,400 years before our era. One of them being examined through the microscope of the professor, he discovered that the mud of the Nile, out of which it was made, contained not only a quantity of animal and vegetable matter, but also fragments of many manufactured substances, whence we may conclude that Egypt must have enjoyed a high degree of civilization upwards of 5,000 years ago. Prof. Unger has been enabled, by the aid of the microscope, to discover in these bricks a vast number of plants which at that time grew in Egypt. The chopped straw, clearly discernable in the body of the bricks, confirms the description of the manner of making the latter, such as we find it in Herodotus and the book of Exodus.

☞ A successful experiment was made in Montreal lately in smelting iron with peat. The trial was made in McDougall's car-wheel factory. The cupola was charged with two layers of iron and anthracite coal. The third or topmost layer was iron and peat. The time was forty minutes less than with coals alone.

☞ A Frenchman suggests an apparently successful plan for electro-plating, so as to secure at once a brilliant surface. He says that by adding to the silver and potassium bath a very small quantity of sulphuret of carbon, the deposit takes place with a most perfect evenness, and results in the production of a highly brilliant surface on the object plated.

Mineral and other On-dits.

☞ Montana has a gold-bearing area of about 83 millions acres. What have been termed the third and fourth tiers of the longitudinal gold-bearing regions of North America, consist of Arizona, Utah, Montana (3), New Mexico, Colorado, Nebraska and Dacotah (4). All the commerce of this vast area radiates to and from the city of New York. Since the first discovery of gold in 1848 and 1849, nearly one hundred and fifty millions of gold has been mined in the countries we have just named. The gold product of California, Oregon, Washington, Nevada and Idaho, from 1849 to 1851, was one thousand seven hundred and fifty millions dollars.

☞ There are reports of great strikes of oil in West Virginia, in the Valley of the Kanawha. Some wells are said to be yielding fifteen hundred or two thousand barrels per day. White Oak, Burning Springs and Standing Stone, are the localities most in repute.

☞ At the present time almost all business in the oil region of Western Canada has come to a stand. Speculation has entirely ceased.

☞ The composition of ancient bronze was nearly always similar, namely, copper 88.67 grains, and 11.33 grains of tin.

☞ The coal panic in England is subsiding, and discoveries of new coal veins are reported from Shropshire.

☞ The yearly produce of the copper mines of Tokat, Turkey, is valued at £100,000 per annum.

All Sorts.

☞ A considerable quantity of the brass wire made in Birmingham finds its way to the Gold Coast. Old Calabar, in the form of what are called "guinea rods," one hundred of which, each 3ft. in length, of Nos. 4 and 5 guage in thickness, packed up in deal cases and being at their destination sold in exchange for palm oil, &c., are used as the "circulating medium" by the natives, and at the death of the possessor are interred with the body.

☞ Mr Payne has recently brought from China to Europe some specimens of the vegetable soap used throughout the empire. It is in the form of pods produced by two leguminous plants. Before using these pods for washing the Chinese first cut away the greater part of the epicarpium, and then rub the wet linen with the pod thus denuded; after which it is enough to rinse the linen in fresh water.

☞ During the late war in Germany the following telegram was received in England: "The greatest portion of the Prussian army has been taken." The excitement was intense in the stock market for several hours, and it was only allayed by the publication of the ending of the dispatch, which had been delayed by the breaking of the wires; "with the diarrhœa!"

☞ Josh Billings says, "when once axed if I believed in the final salvation of men, I sed yes—but let me pick the men."

☞ There are forty-five applications for divorce at the present term of the Superior Court, now in session at Hartford, Conn.

☞ The population of New Orleans is double what it was during the war, and one fourth larger than ever before.

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one of the proprietors, stopping for a few days at the New York Hotel, or address him at Old Mines, Mo. The best of references given.

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For terms and particulars apply to the proprietor.

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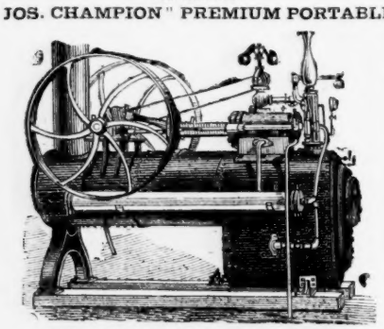

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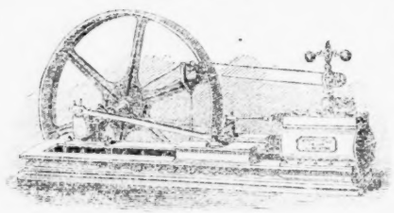

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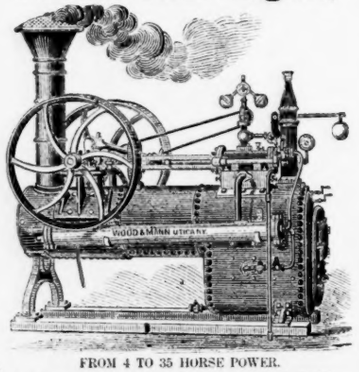

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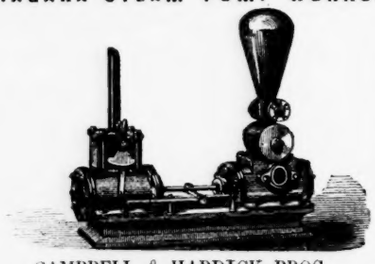

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